CONTENTS

SEPTEMBER, 1934

Honey Markets	516-517
Editorials	521-523
George S. Demuth—Dr. E. F. Phillips	524-528
Selling Honey by the Roadside—E. R. Root	528-531
When Is the Winter Cluster Reared?—Geo. Harrison, Jr.	532-534
Are Low Prices Such a Disaster?—Hy. W. Sanders	534-535
A Glimpse of Old-Time Beekeeping—A. H. Bowen	535-538
Echoes of the Langstroth Meeting—E. R. Root	538-540
Why Drones Do Not Possess a Sting—Dr. K. Brunnich	540-541
G. S. Demuth's Amazing Success—E. R. Root	542-544
Granulated Honey Preferred—G. H. Keen	544
Water Stopped Swarming—Adelaide Combs	544-545
He Makes Money Selling Honey—Fred E. Kunkel	545-546
For the Roadside Market—Benj. Nielsen	546-547
Honey in Shallow Frames—Geo. M. Penn	547
Comments on Current Items—J. F. Dunn	547-548
Spinster Jane Says—	548
From North, East, West and South	549-556
Told by the Jay	557
Heads of Grain from Different Fields	558-559
Talks to Beginners—M. J. Deyell	560-561
From Foreign Lands—W. J. Nolan	562
Gleaned by Asking—The Editors	563-564
Just News	565
Picture Page	566

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1—25-lb. box MILL RUN Plain Brood Foundation, 8x16¾ 10.00

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Sizes 3⅞x16, 4½x16½, 3 11/16x14¼
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10-lb. pails, per reship. case of 6	.75
10-lb. pails, per carton of 50	4.60
60-lb. cans, per case of 2 cans	.95
60-lb. cans, per carton of 16	5.25
60-lb. cans, in bulk, each	.33
24-oz. round glass jars, carton of 12	.60
16-oz. round glass jars, carton of 24	.95
8-oz. round glass jars, carton of 24	.70
2-lb. bee-hive glass jars, carton of 12	.70
1-lb. bee-hive glass jars, carton of 24	.95
½-lb. bee-hive glass jars, carton of 24	.75

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Honey Markets

U. S. GOVERNMENT REPORT
Information from Producing Areas (first half of August)

California Points: Southern California—There has been practically no rainfall during this period. Due to the drouth the condition of wild honey plants is much below normal. The lima bean yield is below that of last year, due to poor secretion of nectar, weak colonies and overcrowding of locations. More colonies than usual were brought into the bean areas. Bees have also been working on mustard, buckwheat, and off-bloom oranges and lemons, with 10-15 pounds gain or more per colony reported from this off-bloom. Sugar is being distributed to many beekeepers by the S. E. R. A. on an application showing the need of feeding and the applicant signing a conditional agreement to pay for the sugar. In some areas fully half the bees should be fed but beekeepers are calling slowly for this sugar and many colonies will be lost. The record-breaking hot weather late in July proved disastrous to many colonies, killing unsealed brood in the Imperial and Coachella Valleys, and many bees in Los Angeles County which were unprotected by shade. On the other hand, where brood-rearing has been heavy some beekeepers have been killing queens to conserve the honey. Trading has been limited during this period, but selling prices have held fairly steady to firm, with occasional sales at higher levels than those of earlier weeks. Export demand has been negligible. Sales by beekeepers, per lb., f. o. b. shipping point in ton lots or more, follow: Orange, extra white to water white, 5½-6c; white, 5¼-5½c; some, 6c; light amber, 4¾-5c, mostly 5c; sage, white to water white, 5¾-7c; smaller lot sales, 8c; some sales white, 5½c; light amber, 4¾-5c; mostly, 5c; buckwheat, extra light amber, 6c; light amber, 4½-5c; light amber sage-buckwheat, 4½-5½c; buckwheat-clover, extra light amber, 5½c; white lima bean, 5c; mixed flowers, light amber, 4½-4¾c; few, 5c; amber, 4c; Imperial Valley alfalfa, light amber to extra light amber, 4⅞-5c; few sales light amber, 4¾c. Beeswax has been in moderate demand with the market about steady at 16½-17c per lb. for good quality yellow wax, poorer quality, 16c per lb., delivered Los Angeles. Central California—Bees have been working near the coast on blue curl and wild buckwheat, but in the interior, due to insufficient rain honey plants are in poor condition. A first extracting from alfalfa of around 20 pounds per colony has been reported, but this is lighter than normal. Demand for honey has been good and prices show little change. Sales reported of large lots, per lb., orange, white to water white, 6-6¼c; light amber alfalfa-bean, 4½-4¾c; few, 4¼c; white sage, 6c; light amber buckwheat, 5½c; light amber mixed flowers, 4½c. Beeswax is moving in limited quantities at 16-17½c per lb. Northern California—Bees are working on hyssop in the high mountains and on morning glory, alfalfa, thistle and other plants in the lowlands. Star thistle is the main source, and though plants in the uplands are drying up, a good nectar secretion has been under way and some beekeepers look for an average crop from thistle. First extracting from star thistle is said to have yielded about 20 pounds of honey, of fairly heavy body. Airplane dusting with arsenical spray has killed many bees in Sacramento Valley. Demand for honey has been good and numerous carloads have been sold during this period. Light amber alfalfa has been sold at 4½-5c per lb.; alfalfa-white clover, several carloads at 5¾c; extra light amber to white thistle, 5¼-6c; light amber mixed flowers, including several carloads, 4¼-5c per lb. Beeswax has sold in a limited way at 16-17½c per lb.

Pacific Northwest: West of Cascades—Bees are in good condition, with plenty of young bees and with brood in four to six frames. Occasional nectar is being secured from smartweed and other plants, but the principal source of nectar is fireweed. The flow from fireweed is somewhat spotted, but generally the yield has been light, averaging around 40 pounds to the colony. Occasional strong colonies on mountain slopes, however, have secured over 100 pounds of water white fireweed of heavy body. Few sales fireweed reported at 6½c per lb. East of Cascades—In the Yakima Valley the second cutting of alfalfa is over, but much third cutting is in bloom and bees are working on this and on sweet clover. The average surplus from this area is 40-50 pounds, with more in prospect if the weather continues favorable. Many weak colonies have secured little or nothing, and some sections report that sweet clover dried up early, with very little nectar provided. In the eastern part of the area some beekeepers have secured good yields, but generally sweet clover has been so scarce that a light crop is in prospect.

Intermountain Region—Although extracting has been under way for some time, comparatively few sales of carlots or more have yet been reported. Inquiries have been numerous, but beekeepers in general are holding their honey for prices of 1c to 2c per pound higher than last year. Occasional beekeepers are reported to be cutting prices, however, in order to dispose of their honey as soon as possible. A few fair-sized lots of white to extra white sweet clover and alfalfa have been reported sold at 4¾c-5c per lb., but 2 cars of water white have moved at 5.35c, with most beekeepers asking 5½-6c, and some 6½c for carlots. Ton lots of white to water white have generally moved at 5-6¾c; 60's, 5-7c; small pails, 6-7½c; few up to 9c; extra light amber, 1 large lot, 4½c; light amber, large lots, 5c; dark, 60s, 5c; small pails, 6c per lb. Few sales white comb, $2.25-3.00 per case; fancy up to $3.50 per case. Colorado—Recent rains have improved the flow of nectar considerably in northern Colorado. Bees there and in eastern part of the state are in fair shape, but extracting in many yards has been very close in the hope that third crop alfalfa or other late flowers may furnish nectar for winter stores. Beekeepers through this area have secured 25-40 pounds or more of honey per colony. Many stands in the Arkansas Valley have been badly damaged by the drouth and hundreds of colonies have died out completely. The late flow on the western slope will be improved by recent rainfall, and most colonies have winter stores, with an occasional light surplus reported, running up to 50 pounds in a few favorable areas. The drouth has produced such a dearth of pollen that bees in large numbers are reported following grain thrashing machines taking up the black smut as a substitute for pollen. Wyoming—The southwestern half of the state has had some rain and showers in the southeast have been locally heavy. As hay is too short to cut in many fields bloom is abundant and strong colonies are doing well. Northeastern Wyoming is still very dry and the crop of honey extremely short. The honey so far extracted is reported extra white to water white in color and of excellent flavor. Montana—Some surplus has been made from white sweet clover recently, and some beekeepers are looking for a crop one-third to one-half of that of last year, with occasional sections anticipating a crop only 20 per cent under 1933. Many beekeepers, however, especially in the eastern part of the state, not only expect no surplus but are looking forward to feeding their bees through the winter. Idaho—Extracting is on in earnest, and the state as a whole will produce much less honey than last year. Some irrigated valleys are producing a normal crop of fine quality honey, but many valleys have run short of water, curtailing the flow of nectar. A good flow was secured from second crop alfalfa, which has now been cut, but a fair flow from third crop alfalfa is expected. Utah—Recent rains in the western part of the state have helped the nectar flow, improving prospects for a fairly good crop of honey.

Summary—Temperatures during this period have continued abnormally high almost everywhere with all-time heat records being set in some sections in the central part of the country. Rainfall has been substantial to heavy in spotted areas in the east and central states and especially at the close of the period in the Plains states. Much of the country west of the Continental Divide is still abnormally dry, however. Bees have been able to gather normal crops or better over much of the white clover belt through securing nectar from basswood and sweet clover. Portions of Iowa and Nebraska report good yields but over much of the Plains area extremely dry, hot weather resulted in very little surplus flow. The crop in the Mountain states is better than anticipated earlier but spotted and often light. On the Pacific coast shortage of rainfall continues, restricting the nectar flow. The S. E. R. A. is providing sugar for hundreds of colonies in southern California. Prospects for a flow from fall plants have been improved during the past few days, though in some cases the plants have dried up too far to be revived. Clover plants for next year are in a doubtful condition. Extracting of the main crop of honey has been under way for several weeks, and several cars of this new honey have already been sold. Prices are starting at 1c to 2c per pound higher than those of a year ago in most areas, although price- cutters have been reported even in sections which did not make a good yield. Comb honey will be scarce this year, because of the irregular flow. Most honey seems to be fully as light-colored, and often lighter in color than usual and of heavy body.

Monthly Report of Honey Producers

Early in August we sent the following questions to honey producers: 1. How does the flow, if any, thus far compare with normal? Give answer in per cent. 2. What is your estimate at this time of the 1934 honey crop in your region as compared with the average during the past five years? Give answer in per cent. 3. At what price has honey been sold or contracted for, if any, in large lots (carloads or less) in your locality during the past month for (a) extracted honey, per pound? (b) comb honey, fancy and No. 1, per case? 4. What are prices when sold to grocers in case lots of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per case? 5. What is the retail price to consumers in your locality of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per section? 6. How is honey now moving on the market in your locality? Give answer in one word as slow, fair or rapid. 7. Is there any of last year's honey left in the hands of producers in your locality? If so, what per cent of last year's crop was carried over? The answers received are as follows:

State. Name.	Estimate 1934 Honey flow.	Estimate 1934 Honey hon. crop.	Large lots. Ex.	Large lots. Comb.	To grocers. Ex.	To grocers. Comb.	Retail price. Ex.	Retail price. Comb.	Move- ment.	1933 carry- over.
Ala. (J. M. Cutts)	100				.55		.65		Fair	0
Ala. (H. C. Short)	90	90					.55		Fair	0
B. C. (A. W. Finlay)	125	150	.10		.65		.80	.25		0
Calif. (L. L. Andrews)	5	2½	.05¾				.64	.15	Fair	5
Colo. (O. E. Adcock)	30		.05½		.40		.50		Fair	0
Colo. (J. A. Green)	75					2.85	.33	.16	Rapid	0
Conn. (A. Latham)	100	400			.80	5.00	1.00	.28	Slow	5
Fla. (C. C. Cook)			.05		.35		.45		Fair	0
Fla. (H. Hewitt)	110	130	.04		.40		.55		Fair	0
Ga. (J. J. Wilder)	20	25	.06		.45		.55		Fair	0
Idaho. (R. R. Isbell)	125	120	.05¾		.38		.46		Fair	
Ill. (A. L. Kildow)	40	40					.50	.12	Slow	0
Ind. (T. C. Johnson)	90	100			.50	3.60	.60	.20	Fair	0
Ind. (E. S. Miller)	50	50			.60	3.60	.75	.20	Slow	0
Ind. (Jay Smith)	100	100			.50	3.20	.60	.20	Slow	0
Iowa. (E. G. Brown)	66	80	.05½		.50	3.00	.65	.20	Slow	0
Iowa. (F. Coverdale)	50	50	.06	2.40		2.00		.13	Slow	0
La. (E. C. Davis)	75	90	.05½		.35		.50		Fair	5
Me. (O. B. Griffin)	90	100						.33	Slow	10
Md. (S. G. Crocker, Jr.)	200	200			.60	3.50	.75	.25	Slow	0
Mich. (I. D. Bartlett)	66⅔	80			.50	3.50	.60	.20	Fair	0
Mich. (F. Markham)	25	30	.07	2.35	.55	3.00	.75	.20	Fair	0
Mich. (E. D. Townsend)		50	.08						Fair	0
Minn. (F. Jager)	100	100	.06½						Rapid	0
Minn. (B. L. Morehouse)	35	45			.45		.60		Fair	5
Nev. (G. C. Schweis)	50	50	.04½						Fair	0
N. Y. (Adams & Myers)	75	75	.05½		.50	3.60	.75	.20	Good	0
N. Y. (Geo. B. Howe)	80	80		3.40	.50	3.60	.65	.20	Fair	0
N. Y. (F. W. Lesser)	150	150	.07½						Fair	0
N. C. (C. S. Baumgarner)	25	25			.60		.75	.20	Slow	0
N. C. (W. J. Martin)	90	90	.05		.55		.75	.20	Fair	0
N. D. (M. W. Cousineau)			.06	3.00	.50	3.50	.58	.20	Fair	0
Ohio. (R. D. Hiatt)	110	110	.07		.55	3.50	.70	.20	Good	0
Ohio. (F. Leininger)	50	125	.08		.60				Fair	0
Ohio. (J. F. Moore)	150	200			.50	3.50	.70	.20	Fair	0
Okla. (C. F. Stiles)	0									0
Pa. (Harry Beaver)	100	100	.07½		.50	3.00	.65	.17	Fair	0
Pa. (D. C. Gilham)	125	175			.75	4.25	1.00	.25	Slow	8
S. C. (E. S. Prevost)		80							Slow	
Tenn. (J. M. Buchanan)	60	75					.75	.20	Slow	0
Texas. (J. N. Mayes)	10	15					.40		Fair	0
Texas. (H. B. Parks)	33	60	.05		.40		.60		Fair	0
Utah. (R. N. Miller)		45	.05¼		42½		.50		Fair	0
Vt. (Phillip Crane)	75	60				4.38	1.00	.28	Fair	0
Va. (L. N. Gravely)	80	60	.10	2.25	.50	2.50	.68	.15	Fair	0
Wash. (W. L. Cox)	50	60							Fair	0
Wash. (G. W. B. Saxton)	100	100					.45		Fair	0
W. Va. (W. C. Griffith)		100					.50	.15	Slow	25
Wis. (N. E. France)	**60**	**80**					**.50**	**.12**	**Fair**	

To New York State Beekeepers - Beeswax -

Send your old combs and cappings to us to be rendered. We have up-to-date steam presses, handled by a man who has had twelve years' experience. Satisfaction guaranteed.

We can also have your beeswax worked into Root's Three-ply, Single-ply and Thin Super foundation at very attractive rates. **WRITE FOR DETAILS.**

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Wanted White Extracted Honey
Send Sample and best price Frt. Paid to Cincinnati, O.
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WALTER T. KELLEY

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I beg to announce that I have moved my factory to Paducah, Kentucky, from which point I will be able to serve you better and cheaper than ever before. Many trains leave Paducah every day and the freight rates are actually less to and from Paducah to most points in the South (excepting Louisiana) than to and from Houma. This is why I moved to Paducah.

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Let me work your wax into bee comb foundation this fall. I will do this on a cash basis or take my working charges out in wax.

QUEENS—Select laying Italian queen bees. Send your orders to me at Paducah for quick delivery, 1 to 9, 70c; 10 to 24, 65c; 25 to 49, 60c; 50, 50c.

WAX AND HONEY, OR WHAT HAVE YOU, ACCEPTED IN TRADE.

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to contact

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CLEAR BRILLIANT FLINT GLASS. You will be delighted with the clean, attractive appearance whether empty or full of honey.

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½-lb. jar—2 doz.	$0.65
1-lb. jar—2 doz.	.85
2-lb. jar—1 doz.	.60

Special prices on large quantities.

Tin cans, pails, shipping cases, comb honey cellophane wrappers, cartons, paper cups. A complete line of containers. Write for full list of containers and label catalog.

DADANT & SONS, HAMILTON, ILLINOIS

Gleanings in Bee Culture
SEPTEMBER, 1934

Honey Crop Conditions

The honey crop for the entire United States is short—the shortest in many years. There was no left-over honey in large lots last year and the shortage of the yield this year should and will stiffen prices. Government reports show a marked advance in honey prices.

In some states late rains, where there was sweet clover and alfalfa, have brought from a fair to a bumper crop. Some spots not fifty miles from the bumper crops areas report complete failure.

Again late rains have in a few favored localities revived white and alsike clover, and bees have actually been storing in late August white and alsike clover honey. Such a thing in the experience of the senior editor, covering a period of over fifty years, has never before occurred.

That these late rains and recent spurts of heavy yields will make up for the shortage of the crop in the drouth stricken states in the West is hardly possible. The grasshoppers in the Rocky Mountain states, plus the drouth, and the great shortage of the yield in California means that but few cars of western honey will be rolling eastward.

The United States government map showing the drouth areas in the West and East is a pretty accurate index of where honey has been secured.

Uniting Weak Colonies

There appears to be a tendency for beekeepers, especially beginners, to winter (or try to winter) weak colonies. This practice does not pay. A weak colony in the fall is not likely to survive the winter and even though it should live through the winter it is still a weak (or weaker) colony in the spring. Such a colony is a liability.

On the other hand, a very populous colony is an asset to the owner. One good strong colony in the fall is worth more than five or six weaklings. It pays to unite weak colonies. Early September is a good time for uniting. See page 560, Talks to Beginners, for directions on uniting.

Abnormal Losses in Bee Shipments

Recent reports show some rather heavy losses in package bee shipments this past season. Under normal weather conditions package bees are shipped successfully, provided the bees are carefully prepared for shipment and handled properly enroute. Bee shippers are now using improved methods of shipping and the express company is giving special attention to the proper handling of package bee shipments. It seems reasonable to assume that the abnormal losses in bee shipments this past season were due largely to the extremely hot weather, the hottest on record. Let us hope that Nature may be more kind to the bee and queen shippers in the future.

The International Congress of Beekeepers at Valdosta, Georgia

From the number of letters coming in making inquiry and from the contacts made at conventions it begins to look as if the meeting at Valdosta will be the largest turnout of beekeepers ever held in America and that, too in spite of the drouth, short crops and depression. Morley Pettit says he will bring a bunch from Ontario and this representation from Canada may give us warrant for the belief that this will truly be an International Congress of Beekeepers.

Mark the date for the week beginning December 17. Be prepared to bring your flivver and camping outfit and then after the big meeting drive into the sunny South and stay there until the bees are unpacked in the spring. The trip and sojourn South will actually cost less than if you stay up North. Fish? Yes, plenty of them.

The Value of Bee Meetings

Beekeepers who avail themselves of the opportunity of attending county, state, or national bee meetings are richly rewarded. After attending all the day and evening sessions beekeepers may stay up late

into the night or early morning exchanging beekeeping experiences. Frequently these midnight sessions prove most helpful. Beekeepers of long experience seem willing to share their experiences. One new idea obtained may be worth many times the cost of attending the meeting.

Watch for Unscrupulous Buyers

Whenever the demand for honey is good there are always reports of unscrupulous buyers. Beekeepers should carefully investigate all offers for honey. Frequently unknown buyers offer a little more than the market price. If they are prepared to pay cash, all well and good. Checks should not be accepted unless they are certified or unless the bank on which they are drawn identifies the description of the buyer and reports funds sufficient to pay the check. It is too bad to produce a crop of honey and then find that the check tended in payment therefor is no good.

National Honey Week

The American Honey Institute is again sponsoring a National Honey Week, November 11 to 17. The Institute is making elaborate plans for this Honey Week, and these plans can be successfully carried out only if beekeepers all over the country enter into the idea with enthusiasm.

Just as in the past, the Institute is making contacts with food companies, home economics departments and radio outlets. These ideas and suggestions are all included in a program, copies of which are available to any one writing to the American Honey Institute, Commercial State Bank Building, Madison, Wisconsin. Orders for the programs should be gotten in early so the Institute will know how many to have printed. See the Institute ad on page 519.

"What's the Use of Knowing So Much When So Much You Know Ain't So?"

There was a very heavy loss of bees during the past winter with its blizzards and zero weather. This was to have been expected. It was the most severe winter since 1882-1883. Its toll was terrific, as reports show.

There has been a belief that the problem of wintering bees successfully is solved and that all that is needed is good windbreaks, plenty of sealed stores, ample packing and a restricted entrance, when, presto! there would be perfect wintering. Let's see. The developments show that perhaps we have been putting too much emphasis on packing and not enough on plenty of pollen which of course means brood rearing and young bees both in the fall and in the spring. A colony made up largely of old bees, regardless of the amount of packing and stores supplied, may and probably will die in a winter as in the past. Conversely, a colony not packed, but having a young queen, plenty of good, natural stores, and a liberal supply of pollen in late summer and fall, will probably come through in good condition most winters, other things being equal. But probably colonies moderately packed will be a little better off than those with no packing whatever. It should not be inferred that packing is not necessary. It is indeed a great help.

Now the question is, why did many unpacked colonies with young queens and liberal supplies of pollen come through in good condition during a winter like we have just had? Because pollen and plenty of it with ample stores and a good queen means young bees in the fall and again in early spring. The proof of the pudding is in the eating.

For several winters our apiary manager, Mr. Deyell, has been carrying on a series of experiments in rather a large way. The colonies at some of our outyards were divided into two groups. One group was in single-walled hives and the other in double-walled. All of them had an upper story or food chamber of good, natural stores and as much pollen as the locality in the fall would afford. There has been little, if any, difference in the wintering of the two groups. The past winter the bees in single-walled hives, with good wind protection and in localities where pollen was plentiful last fall, wintered better than colonies in packed hives in localities where pollen was scarce last fall. All this bears out the statement made by Dr. C. L. Farrar of the Bureau of Entomology, United States Department of Agriculture, in the May issue, page 276.

Professor H. F. Wilson, University of Wisconsin at Madison, has been saying for several years that we have been putting too much stress on packing and not enough on the presence of plenty of pollen and young bees. He has also been saying that too much packing is detrimental for the reason that occasional warm days during the winter do not

allow such heavily packed colonies to expand the cluster and get onto fresh stores.

About the time that the writer took charge of this journal, over forty years ago, the pollen theory occupied many pages of the journals. It was then believed that winter stores should be sugar syrup and that the presence of pollen or a large amount of it caused dysentery in the spring. The result was that thousands of beekeepers extracted all the honey out of the hives, fed sugar syrup, thinking that they were gaining thereby and then on top of it all, took pains to remove all the combs of pollen. What was the result? Spring dwindling was made infinitely worse and along with it came dysentery. The facts were, the poor bees did not have a balanced ration. They did not have the where-with to raise young bees to replace the constant dying off of the old bees. If there ever was a theory or proposition that almost caused disaster in many bee yards all over the United States it was the old pollen theory, now happily exploded.

This brings us back to the old adage of Josh Billings, "What's the use of knowing so much when so much you know ain't so?"

The Demuth Memorial Meetings in Michigan on August 1 to August 4.

These were held in several cities and towns in various parts of Michigan as scheduled. In some respects these hop, skip, and jumps from town to town were remarkable—remarkable first in the general turnout, in spite of an unprecedented drouth and the partial or total failure of the honey crop in Michigan. They were remarkable, second, in the optimism seen and expressed by those who came, in the belief that the failure or partial failure of this and the previous season were not to continue; that better times were ahead. When we drove past the brown fields of Michigan, saw corn drying up; when we saw good corn where there had been local rains all shot to shreds by hail; when we saw barns in central Michigan with the tops blown off, other barns and buildings reduced to a great mass of kindling, we were amazed at the never-dying comeback spirit of the Michigan beekeepers.

In another and more serious way those splendid turnouts were a fine token of love and respect for that modest man whom they had known, Geo. S. Demuth, and whom they had come to honor by their presence. He was a prince of a gentleman to them all.

The survivors of the editorial staff of Gleanings will long cherish and remember some of the fine things said at these meetings of our former editor and chief, by the editors of the American Bee Journal in the persons of M. G. Dadant and Frank C. Pellett. Mr. Kenneth Hawkins of the G. B. Lewis Company, told of his fine contacts with Mr. Demuth when both were co-workers in the Bureau of Entomology; of how he had been a real friend to him, and how he had helped him by his practical knowledge of bee culture.

Mrs. Jensen, in one of her addresses on how to use honey, told of her wonderful visit with Mr. Demuth at the Minneapolis convention; and of how he had never seemed more vigorous in mind and body.

The tribute paid by Dr. E. F. Phillips, who had known him so many years in the Bureau of Entomology, was a masterpiece. Excerpts of it are given on page 524.

Over fifteen years ago we came to the conclusion that George knew more about the practical management of bees than perhaps any other man in the United States. We entered into negotiations with Dr. Phillips, his chief, and with Mr. Demuth himself to see if we could get him to become editor of this journal. We explained that in the new capacity he could make larger contacts with more beekeepers than he could in the Bureau. With the thought that he might be able to do more good, he came to us in 1920. His thirteen years' work speak for themselves. The beautiful and fine thing about his work at Medina was that he made thousands of friends everywhere. His competitors in the journalistic field have spoken most highly of him as shown at the meetings in Michigan.

It is but fair to say in this connection that only a small part of the general discussion at these meetings related to the life and work of Mr. Demuth. This was as it should have been and Mr. Demuth would not have had it otherwise.

The general papers and addresses were of the very best. The magnificent hospitality and entertainment extended by the W. K. Kellogg Company and by W. K. Kellogg himself at the Battle Creek plant will long be remembered by the beekeepers who were able to go to Battle Creek. A further report will be given in the next issue.

George S. Demuth

Dr. E. F. Phillips

[The following is from an address depicting the high lights in the life and work of Geo. S. Demuth, given at the Michigan Memorial meeting, held on August 1 to 4.—Editor.]

We meet today to pay tribute to the life and labors of George Sidney Demuth. When on the night of March 2, 1934, word was flashed to some of his closest friends in beekeeping that he had suddenly left us, it started a train of sadness among beekeepers of this country and Canada which would not be equalled by the loss of any other leader in beekeeping. Since that time we have individually tried to express to ourselves what we owe to his work among us, and today we meet to attempt to put this debt into more concrete expression. He died on the sixty-third anniversary of his birth, not an unusually long life but one replete with benefit to others, marked by manifestations of goodness of heart toward his fellow men and especially abounding in service to his fellow beekeepers. While we all feel the loss of a friend, there is satisfaction in creating this opportunity to bring his sterling character and his omnipresent helpfulness more clearly to the attention of those who were his personal and vocational friends. Every beekeeper should be gratified that George Demuth's life was as busy as he desired it to be, copiously crammed with opportunities for good which he craved and above all we are glad that we were his friends. This is no occasion for grief but rather for rejoicing at the successful completion of a full life. If he had lived longer, he could have enjoyed more of life and could have continued his good work, but at the time of his departure he had touched the lives and hearts of a multitude, and they are better beekeepers and better men and women because he lived.

I know that you will pardon my personal gratification that I am asked to express to beekeepers and for beekeepers the debt which we owe to Demuth. This is a task for which I am especially fitted only because of our long years of living and working together. I feel the responsibility which rests on me when I attempt to designate those things in his life which were most important, yet at the same time I feel genuine happiness in being given the opportunity to tell to those who knew him less well than I what a fine character he was and how much all of us owe to his skill and desire to help us. If I can help to make you know and to understand George Demuth better, I shall be most happy.

This is not a suitable time to present all the details of the life of George Demuth. That part of his life during which he was most helpful to beekeepers was spent in public positions, where his actions were conspicuous and his movements well known. I shall instead chiefly relate incidents in which we had personal contact through our personal and official relationships. I have selected these in order to indicate the diversity of his interests, and especially to indicate his eagerness to improve the methods of beekeeping in order to remove the hazards from honey production arising from faulty management. He believed that much uncertainty arises from errors in management and that by guiding beekeepers to an appreciation of fundamental principles, most of these errors might be eliminated.

To get a background for the career of George Demuth, it is necessary to go back into an earlier period of beekeeping from which he drew inspiration and from which he learned much. As a boy on an Indiana farm he had few neighbors who were skilled in beekeeping and he soon became a recognized authority among them. In the state to the north there were giants

in the industry, and it is significant that the state in which we meet today to honor Demuth's memory is the state from which he first learned the important things in beekeeping. Demuth himself did more to analyze the historical development of American beekeeping than any other person and most beekeepers are familiar with his studies in this line.

Demuth's active life as a beekeeper began in the comb-honey era and covered the greater part of the two most important periods of American beekeeping. To understand his position, we must briefly review the comb-honey era. Comb-honey production exaggerated some of the problems in beekeeping practice and brought methods of manipulation of the bees to the fore. At that time the generally accepted policy was based on a belief that the way to get bees to store honey in sections was to crowd weak colonies into the supers, whereas today comb-honey producers aim to force super work by greatly strengthening the colonies, a complete change of basic policy. The earlier systems led to the invention of shallower hives, such as the Heddon and Danzenbaker, and also led to the making of narrower hives, such as the eight-frame Langstroth. This is no occasion to discuss the evils of miniature hives, but we may at least rejoice that the Heddon and Danzenbaker hives have disappeared and that, while the eight-frame Langstroth hive is still used, it is slowly but surely fading from the picture.

These miniature hives, then used by most beekeepers, in single stories for winter, were too small to hold a supply of honey adequate for a colony during winter and for it to build up to good strength before the early honey flow, and at that time no beekeeper worried much about any honey flow anywhere in the country except that from white and alsike clovers. Demuth always used two Heddon hives in winter. The great areas of honey production of the West were then in their beginnings and were not important factors in the industry. Winter losses were terrific and Heddon once boasted that he had solved the wintering problem because he had reduced his losses one winter to 25 per cent. It is surprising to note that the wintering problem was then not considered especially important, and little progress was made in its solution during this entire era, when so many other problems were solved. Probably no one factor was more potent in bringing about a willingness to change to extracted honey than the failure of beekeepers of the comb-honey era to winter economically and effectually.

With these little hives, swarming was bad, and swarming is always worse in comb-honey production. On this great problem the masters of the day made great progress. Perhaps no problem so united the leaders and enabled them to stimulate each other into the finding of solutions.

When I merely mention the masters of that day, it becomes clear that this was the period during which more was learned about the management of bee colonies than in any other period in the history of American beekeeping. I have on previous occasions referred to a group of leaders of that day as the Michigan School of Beekeepers, the outstanding men being Cook, Heddon, Hilton, Taylor, Hutchinson. Those whose privilege it was to know these men, and I was one of that fortunate number, are aware that these five men were quite unlike in many ways. Each was oustanding in his own branch of beekeeping and each had personal qualities which enabled him to lead, but the five did not always agree. Of these men, Professor Cook stands out as the clearest thinker, Hutchinson as the most capable teacher, and Heddon as most fertile of ideas but not always practical or sound. Hutchinson was so impressed with the importance of the new ideas of that period that he published his own journal, so that he could write all that he wished and could provide a meeting place for ideas. The first six volumes of the Review are second to no volume of any American bee journal, with the possible exception of the totally different first three or four volumes of the American Bee Journal. No journal could hold the pace which these two set for themselves in their earlier days, and no journal ever approached either one in merit until Demuth assumed the editorship of Gleanings which he retained at topnotch until his death.

Outside Michigan there were also some outstanding leaders of that day. Even though I am speaking in Michigan, I must take the credit for the greatest man in that day of beekeeping away from your state, because you never had a man of the measure of Doctor C. C. Miller. I know that you all so loved Doctor Miller that you will agree with me in this statement,

and you owe him more than you know. Doctor Miller was the man who kept his head level and who could bring even Heddon into line with his clear reasoning and great leadership. New York contributed M. M. Baldridge and Doolittle to this era; Ohio, A. I. Root and Hasty; Kentucky, Demaree, and there were a few others who played important roles.

These great beekeepers almost solved the swarming problem, and at least furnished the background which enabled Demuth at a much later period to solve it. They were not always able to prevent bees from dividing their working force through swarming, but since that day, no new means of swarm control has been devised, and we use today identical methods as they were first described by these men. I shall refer to Demuth's major share in the work on this problem later.

From boyhood Demuth poured over the writings of the giants of beekeeping of the comb-honey era and he soon became their devout follower. He equipped his apiaries with Heddon hives, because Heddon said that it was right to do so. He read every word that the other Michigan men wrote and became devoted to Doctor Miller, personally and professionally. He rode a bicycle in the good old days of dirt roads to visit these men and also rode to Medina to visit A. I. Root, with a hero worship which most of us lose after we outgrow our boyhood. In his apiaries, he followed the teachings of these men, and his first successes were a direct outgrowth of the leadership of the men of that day. I can find no reason for thinking that in these early days Demuth manifested any marked originality in beekeeping, and his outlook and experiences at that time were not of such a character as to enable him to do so. It was only when his horizon was broadened that his imagination was given full play.

In his boyhood, Demuth labored under the handicap of a shortage of funds, if that is actually a handicap to a boy. At any rate, his financial burden was a heavy one, and probably it was more of a load than a boy should be called upon to bear. In this period he learned the lesson of thrift which he never forgot, and he managed by economies and saving gradually to build up his apiaries while he taught school near his farm home. He went to DePauw University for the year 1891-92, but was forced to drop out and to remain at home to run the farm after the death of his father in August, 1892. He continued teaching, keeping bees on the side. The bees increased and after 18 years of teaching, he reached the goal toward which he had so long worked, that of having enough bees to occupy his full time. He had in mind making beekeeping a vocation, but just then his plans were changed by another event.

At just about this time, Demuth and other Indiana beekeepers induced the state legislature to enact a law to provide for apiary inspection. When this happened, March 5, 1909, the work was put under the administration of the State Entomologist, and it became necessary to find a man who could do the work. The State Entomologist at that time was Benjamin W. Douglass, who recently wrote so appreciative a tribute to Demuth, and who appointed Demuth to this position. We now come to an important step in Demuth's development, one of the largest that he had yet been called upon to make. When he was appointed apiary inspector on April 1, 1909, he refused to give up any of his bees, which meant that he must totally revise his system of management so as to do the equivalent work in a shorter time. He was able to do it, and that success stimulated him to much greater progress along the same line later. It is probably correct to say that when Demuth undertook to run his bees and to inspect at the same time, he became a genuine commercial beekeeper for the first time. This step in systematizing his work to save time in management was a forward stride of great moment to him, and to beekeeping.

My first meeting with Demuth came at the end of May, 1910, and for twenty-three years thereafter our association was close. The circumstances connected with our first meeting may be of special interest to this meeting. During the month of May, 1910, I was asked by Mr. W. Z. Hutchinson, then apiary inspector for Michigan, to make a survey of European foulbrood conditions in the state, so that he might be better able to plan his work to include control of that disease. It must be recalled here that at that time there was no satisfactory method of control for European foulbrood, although Alexander's treatment had been published. Almost none of those who were interested in disease work then had any confidence in the Alexander method. I agreed to spend the month of May in Michigan, visiting api-

aries here and there to observe the ravages and extent of the disease and then to report to Mr. Hutchinson what I found. As a matter of fact, I learned almost nothing about the disease on that entire trip, for it rained every day wherever I happened to be, making it impossible to open colonies except for an occasional few minutes at a time. Even so, a considerable amount of the disease was found. The trip, while conducted under trying conditions and with unsatisfactory results so far as the real purpose of the journey was concerned, did give me an opportunity to meet and to visit with a number of prominent beekeepers of the state, so from that point of view it was a delight. On the return trip to Washington, I went to Peru, Indiana, to meet Demuth, with whom I had been in correspondence from the first day of his assumption of duties in Indiana as state apiary inspector.

Within a short time after this first meeting, I wrote Demuth to offer him a place in the Bee Culture Laboratory of the Department of Agriculture, since he was just the sort of beekeeper that we needed to strengthen the staff. Again he was faced with the problem of further curtailing and of totally readjusting his work with his bees, this time so as to manage them in thirty days' consecutive leave of absence annually, and when he would be unable to see them all the rest of the year. At first he said that it could not be done, but he finally accepted the position and readjusted his plans so as to keep his bees successfully. He entered government service July 1, 1911, and we all know what notable service he rendered in the position.

In discussing Demuth's service of over nine years in the Bureau of Entomology, I must beg your indulgence for discussing my share in it, for throughout his stay he and I worked together almost constantly. We each worked in co-operation with other members of the staff during this period, but no two members of the staff worked co-operatively so much of the time as did Demuth and I. Our work was almost always a joint effort, and I am quite sincere in stating that without his help I could not have accomplished many things for which I am sometimes credited. Prior to Demuth's appointment, the chief work of the Bee Culture Laboratory had been on the brood diseases of bees. By 1911, when Demuth joined us, we had come to a good understanding of the disease problems, the several states were rapidly undertaking regulatory control and beekeepers of the whole country were working more intelligently than was possible before. This made it appear to be a suitable time to broaden the work of the laboratory by adding other lines of fundamental research.

With these considerations in mind Demuth and I discussed the problems which should next receive attention. Beekeepers were asking for work on a multitude of small problems, and if we had undertaken all that they desired, we should never have reached the stage of working on vital problems. The diseases were an emergency problem, and the time had now come to undertake the very foundations of beekeeping practice. While the outright loss of a colony from disease is a discouragement to a beekeeper, a far more serious loss comes to him when he winters his bees badly, and the unfortunate feature of the wintering problem was and is that many beekeepers have never wintered their bees well and are therefore totally unaware of what kind of colony is easily obtainable with proper winter and spring care. It is not good beekeeping to lose heavily in winter and then to make up for the losses the following spring before or during the honey flow, yet this plan is still followed by many who are otherwise good beekeepers.

Demuth and I discussed at length the next phase of beekeeping work to be undertaken, and we finally settled upon wintering as that phase of beekeeping most in need of investigation. At that time we collected the literature on the subject, of which there was an enormous amount. During this period of early discussion we agreed each to formulate a program for the investigation independently and then to compare notes and to make up a final program. When we came together we found that both of us had planned experiments of a strictly practical nature. We, of course, differed in details of the plans. We were, however, unable to agree on a program for the first year with which one or the other of us did not find some fault, and we were much disturbed at the situation of being unable to formulate a plan of research which would seem to be getting somewhere. One of us would propose something one day and oppose it the next, and I should like to add that both of us seemed hard to please.

Finally one day I expressed a thought

which had been growing on me, and I expressed it to the intensely practical Demuth (as I then supposed) with some fear and trembling. I said that I felt that at the then stage of knowledge about bees in winter, it was too early to plan experiments in practical wintering but that it might be better if we merely set out to find out how the bees behave in winter and during the broodless period. To my surprise and joy, Demuth at once accepted the idea with warm approval, and on that basis it was not at all hard for us to formulate a plan of research and even not too hard to carry it out, although the enormous amount of work involved was fortunately unknown to us when we began. We took at least a half million temperature records, on instruments with which neither of us had previously been familiar. We worked for a considerable time on eight-hour shifts, day and night at the temperature readings, at one time for three weeks running. Altogether it was as strenuous a time as I have ever experienced, but well worth the effort.

I should like to relate many things connected with that investigation, many of which might have practical significance, but time does not permit. I must, however, record that Demuth always willingly did his share and tried to do some of mine during the strenuous periods. I shall never forget the November day during one of these periods of eight-hour shifts when he took over the job at 4 in the afternoon to run to midnight. All that day the temperature of the cluster had been slowly dropping, until the temperatures where the bees were situated were lower than we had previously seen, and it seemed evident that something must soon happen. I left shortly after 4 o'clock, took a little walk for some exercise, ate my dinner and came back to take a nap on a cot which we kept right in the laboratory, to find Demuth also expectantly waiting for something to happen. While I was hanging around our outer room, suddenly Demuth exclaimed that the temperature at one thermometer had risen. I went in where he was and together for the next two hours we watched the temperatures jumping about, which meant that the bees were forming their winter cluster. At the time we experienced only excitement and it took some days of charting and plotting of curves to learn that they had made their first movement toward cluster formation when the temperature of the bees was exactly 57° F., which we later confirmed as the critical clustering temperature. There was at least real fun in watching the excitement of the bee cluster for the first time, and now none of you can ever have that thrill, for it has been seen before.

(To be continued.)

Selling Honey by the Roadside

E. R. Root

Signs Must be Near and Attractive and Honey Clear and Sparkling

There are two ways for the beekeeper to sell his honey. **One is to sell at roadside** stands and the other is to sell the crop in bulk to the larger buyer or bottler of honey. Very often a combination of the two plans is worked to good advantage.

The one who sells in large lots generally does not wish to be bothered with roadside selling. It means that some one must stay at home **at all hours and days,** nights and Sundays, and usually that means the wife. If there are several members who can change off it is not so monotonous.

Bottling is a messy job and many don't know how to do it properly.

The honey must be of good flavor. It must not be heated to over 160 degrees F. and in any case, it must not be kept hot long at any temperature, even as low as 130 or 140 degrees F. Unless a thermometer is used, one is quite liable to spoil an otherwise good honey by overheating. both in point of flavor and color. This means, of course, few or no repeat orders.

One should not attempt roadside selling of honey or other commodities unless his home is on a main highway where

there are many motorists passing every day. It is still better to locate on a fork of the roads or better yet on a cross roads connecting large towns and cities. The mistake is often made of locating one stand too near another. Both are liable to cut prices.

There should be a few hives of bees in sight and more important than all, there should be an attractive display of honey in tin and in glass and a neat and attractive sign that can be read a hundred feet back to give the motorist time to stop. See Fig. 6. And when he does stop, there should be plenty of room to park off the main highway or the motorist will rush on.

Snapshots on the Way

In our last issue I showed how honey could be sold at regular gas stations. Now I wish to show a few honey stands that my camera caught on the way to and from Florida, and then some very attractive stands in Florida itself for Florida is the Eldorado of the northern motorists who sojourn in that land of sunshine and balmy air.

Florida is fast working up a reputation for her orange and palmetto honeys. Motorists coming or going into the state will lay in a supply. Orange!—of course, its name sounds good and so is the honey.

Thirty miles out from Washington, D. C., at Mt. Airy, on Route 40, is a honey selling stand operated by Rockward Nusbaum and his wife. See Fig. 1. In addition to the honey sold from Honey Hill Bee Farm, Mr. Nusbaum sells bottled honey and honey in bulk to the retail stores of Washington, D. C. The family lives in the building and pack their honey there.

Mrs. Nusbaum was quite surprised to see me. She had not expected any one from Medina and then she reminded me of how some years ago she and her husband visited the Home of the Honeybees

Fig. 1.—A honey selling stand about 30 miles out from Washington, D. C., on Route 40.

on their honeymoon and they have been in honey ever since.

The season has been lacking in moisture, and conditions were not promising, but they were hoping for the best.

A little ways out of East Liverpool, Ohio, there is a young beekeeper, Thomas Black of Black Bros., who has established a couple of honey stands with a full sized hive with glass sides and ends to attract attention of motorists. See Fig. 2. In Fig. 3, we find near by a row of nicely painted hives containing bees and the aforesaid glass hive.

How a Heresy Helps to Sell Honey

Those who own and operate roadside stands should understand and recognize the psychology of the motorist to the ef-

Fig. 2.—Thomas Black's honey selling stand out in the open near East Liverpool, Ohio.

Fig. 3.—Mr. Black believes that bees in a glass hive help to sell honey.

feet that "store honey may be adulterated." Here are some real bees and why not buy real bees' honey from the producer or the bee man direct?

Of course, we know that the motorist's psychology is wrong, but so long as that false notion exists and it does, why not capitalize on it, put out a little yard of bees and make them help sell the honey?

A glass hive or two in the display of honey will make some motorists stop out of mere curiosity and once stopped they will buy honey.

The House & Haynes Method of Selling Honey

Just as you are pulling into Dunedin, Florida, about twenty-five miles east of Tampa, you see an elaborate honey stand in front of a general extracting house and residence upstairs. See Fig. 4. Mr. House of House & Haynes, sells the honey, and Mr. Haynes produces it from a series of outyards located mainly in the orange groves of the vicinity. I said to both members of the firm, it is one thing to produce the honey and quite another thing to sell it. As the firm owns and operates 600 colonies the matter of selling the output within a range of 100 miles is no small matter. Besides the main selling stand, as shown in Fig. 4, Mr. House nas established dozens of places in the nearby cities and towns—particularly in Tampa, where the House & Haynes honey is on sale. At the Dunedin place Mrs. Haynes

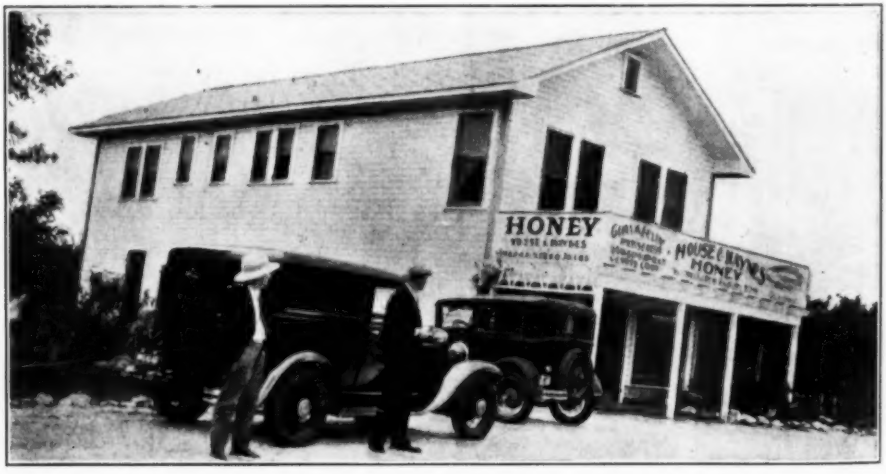


Fig. 4.—House & Haynes' main selling roadside stand. The rear room is used for extracting and the upper story for the residence of Mr. House and his family.

presides. You will like her and her honey. Both are extra fine.

Mr. Haynes and his helpers are in the bee yards getting ready for the crop and then taking it. That will be the subject of another story later on.

Mr. House is on the road most of the time, and how he visits the trade and delivers the honey in a rear-opening light delivery truck is shown in Fig. 5. It will

Fig. 5.—Mr. House's light honey selling and delivery truck. The rear door is a great convenience for loading and unloading.

hold all the honey, both comb and extracted, that Mr. House cares to deliver in a day's drive. He watches his customers to see that they do not push the honey out of sight. He advises and helps in the display of it and where the supply is running short draws from his truck. He sells to groceries and gas stations. His activities along these lines explain why honey is found in so many gas stations in this section of Florida.

These light rear-opening closed body delivery trucks are used by beekeepers all over the country. Many a beekeeper honey salesman makes the mistake of buying a regular five-passenger sedan. With this he delivers his honey to the small town grocerymen and gas stations. In a short time the interior of the car is ruined. It can carry but a small load of honey at best. The one here shown can be used as a family car by putting in seats and is just right for delivering honey. It costs no more. Service and utility should come first where the family can own only one car.

Mr. House makes a good appearance, does not try to over-sell, and at all times keeps his customers interested in honey. His delivery truck is kept washed and bright. It is just as important for a salesman to keep his machine clean as it is for him to wear a clean necktie and collar and a suit clean and pressed fore and aft. Mr. House fills the bill for a model honey salesman, and he is making good for one sees the House & Haynes honey on sale in all the stores and villages for miles around.

House & Haynes believe it pays to advertise. At the annual State Fair at Tampa they always have a very large exhibit of honey and wax. See page 274 of our May issue.

The firm of House & Haynes does not attempt to sell in carloads to distant markets. So far they sell around home and dispose of their entire product. They are the most extensive beekeepers in the Tampa district.

If you go to the Century of Progress Fair, Chicago, this summer you will find a display of wax and honey under the House & Haynes name.

Henderson's Honey Candies

Near the House & Haynes honey stand at the fork of the roads leading to Tampa

Fig. 6.—A very unique honey candy sign owned by W. H. Henderson, Dunedin, Florida. Mr. Henderson takes care of the bees and Mrs. Henderson makes the delicious candies.

is another honey and honey candy stand operated by W. H. Henderson and wife. The latter makes the candies of honey and other sugars, and delicious candies they are. The sign is large and attractive as will be seen in Fig 6, with Mr. Henderson standing at the left.

Medina, Ohio.

When Is the Winter Cluster Reared?

Geo. Harrison, Jr.

Early Reared Bees May Winter Perfectly if Not Worn Out by Too Great Activity in the Fall

Among the fundamentals of beekeeping I learned that the bees that form the winter cluster and live over to see spring brood rearing well under way are reared during the late summer and fall, but lately, under some circumstances, I have been questioning this principle.

I have noticed many times that the cluster in the spring seemed to bear very little relationship to the amount of brood reared the fall before, but that observation made very little impression on me until the spring of 1933. Again, I have found queenless colonies just before fruit bloom that were in such good shape, except for the lack of brood, that I had to look twice to be sure they were queenless. Of course, this is not conclusive evidence as the queen could conceivably have been present and in good condition in the fall, but, as a rule, I would say that such colonies probably lost their queen during the summer or early fall in an attempt at supersedure. If this theory is correct the queen was failing before that time and most of the bees were reared earlier in the summer.

An Experiment with Packages

Another observation was made in 1930 and 1931. In the spring of 1930 certain fruit growers and I decided to purchase 15 10-pound and five 5-pound packages of bees with queens from the South. The packages arrived in good shape just at the beginning of apple bloom and were installed in hives. The packages produced a surprising amount of surplus apple honey, as compared to the over-wintered colonies, though the 10-pound packages flew, so far as we could observe, no better than a large number of the over-wintered colonies, and the 5-pound ones not so well.

I was delighted with the prospects and had visions of an extra super of surplus from the package colonies, but to my disappointment they failed to go into the supers when the surplus flow opened, whereas the over-wintered colonies took possession eagerly. At the end of the season the total surplus removed from the over-wintered colonies, besides their winter stores, was 83 pounds average; package colonies, none. Besides that most of the package colonies needed feeding for winter.

At first, I was a little inclined to wonder what the trouble was, but a little thought soon convinced me that whereas the over-wintered colonies had been steadily building up and converting the honey gathered during fruit bloom into bees and had remained in normal condition regarding the proportion of brood, young bees and fielders at all times the package bees had started off at apple bloom time with all old bees that had withstood the wear and tear of the trip from the South and with no brood, not even a laying queen for a day or two. These odd bees died off rapidly in the field, leaving the hives filled with brood and a comparatively few young bees at the beginning of the main flow, which that year, was short but heavy.

The three foregoing paragraphs have an important bearing upon observations made the following spring, 1931. The bees of the package colonies, which were reared mostly between the beginning of fruit bloom and the first of July at the latest, and, as there was no fall flow, had taken little if any part in field activities, went into winter in 1930 in fine shape. In the spring of 1931 these colonies were easily twice as good as the average of the rest—those colonies which had been actively engaged in honey gathering the year before.

The season of 1932 dawned with one of the best prospects I can remember. Rain had been plentiful up until the first of the main flow, the ground was saturated, plants were in fine shape and the bees in good condition, but a drouth set in and the flow was cut off short the latter part of June. As usual, after the main flow is over, the queens slackened in egg-laying and were soon taking it quite easy.

Colonies Inactive During the Summer and Fall

From time to time during the summer, as the queens became available, requeen-

ing was on the program. I usually continue this through the summer and fall, until the job is finished. I had been noting that brood seemed unusually scarce but gave no particular thought to it as I expected it to increase later, but when I took a lot of queens to a yard about the middle of September I found that many of the old queens had completely stopped laying and I had difficulty in finding them. I was surprised at this but not unduly worried as most of the colonies had already had the old queens removed. Just to see the difference made by young queens I opened a colony requeened several weeks before. When I removed the center comb I found no brood and wondered what could have happened to the queen as I knew she was safe shortly before. Accidentally, as I was sure the queen was gone, I spied her going around the edge of the comb next to the one just removed. But why was she not laying? I looked into several colonies but could find only a few scattered eggs. I then inspected colonies in which queens should just be laying. In most of these there were no eggs at all and I had no way of knowing whether the queens were safely introduced or not.

What was the cause? I had been through drouths before but had never seen conditions such as this. Aster was in full bloom at this time but the bees were paying no attention to it, in fact, they were not paying any attention to anything. I then began summarizing conditions as I had noted them in the yards since the flow and I realized that there had been less activity even than in the year of the great drouth, 1930. This year the yards had been absolutely dead, so far as bee flights were concerned, every time I had visited them. The bees had been clustered on the front and under the hives all summer as quietly as a swarm. This broodless condition continued until winter set in.

To say that I was distressed is to express it mildly. Had I not been taught that the winter cluster was reared in the late summer and fall? Would any of the colonies live through the winter?

The first warm day in the spring I hurried out to the yards for an inspection. I found only one dead, and it had starved. Brood rearing was progressing most satisfactorily in the others. But still, would the bees last or would I have severe spring dwindling? But they didn't dwindle. By apple bloom time they were as fine a lot of colonies as I have ever had. Some of them had twelve frames containing brood. I am reminded here that before very many years have passed I will be an "old, old man, bowed down by the weight of my troubles, most of which never occurred."

When were the eggs laid that produced the bees that reared this spring brood? Most of them before the first of July the previous year. However, as I stated above, the bees had remained during the previous summer and fall as inactive as I have ever known bees to remain during these seasons. Water gatherers were about the only bees flying.

Too Much Fall Activity May Deplete Colonies

Last fall, 1933, there was quite a nice fall flow from aster, as compared with a number of seasons past. In addition to the much-needed stores—about 10 to 15 pounds—brood rearing was stimulated to an extent beyond that of a number of years. While the weight of the hives increased it did not compare to that described recently by Mr. Demuth, where the bees filled the brood chamber, a food chamber and stored quite a little in an extra super. Such a flow as described by Mr. Demuth probably produced brood somewhat comparable to that of spring and filled the hives with young bees for winter, but not here. Judging by the winter clusters, I am afraid it did more harm than good by wearing out the old bees and producing brood in sufficient quantities to replace them.

I have often wonderd how the beekeepers in the North could get such strong colonies for winter as they sometimes describe. I well remember a northern beekeeper telling, some time ago, how his bees were found one frosty morning in the fall clustered out in front with frost on their wings. They were too numerous to get inside. We never have anything like that here. It must be that the short summer and early winter brings winter confinement close upon the surplus flow so that the bees have little intervening time in which to wear themselves out. Cold does not seem to hurt bees as long as they have food above them to which they can get. Of course, I realize that it may possibly be so cold in parts of the North that the cluster is even prevented from moving upwards. Packing is probably necessary in such climates but here I have never had a colony starve with honey between them and the top-bars. I have

tried several experiments with packing but have never found that the packed colonies had any advantage over the unpacked.

Just after Christmas I received a letter from a man in Michigan. He said: "We just had a fall of five inches of snow. Everyone is out sledding. Wouldn't you like to come up and join them? I don't suppose you in the Sunny South ever have snow." Virginia is the "Sunny South" to most northerners. When I received his letter four and a half inches of snow lay on the ground and that night the temperature dropped to four below zero and again to zero a few nights later. In March, 1932, there was an 11-inch fall that drifted into the roads eight feet deep. For ten days during that storm the temperature approached zero each night and only once for a week went above 32 at midday.

That spring and summer reared bees can be wintered satisfactorily here in northern Virginia I know and I am afraid that fall reared bees, here, seldom compensate for the wear and tear caused the old bees.

Bluemont, Virginia.

[In the extreme South, especially in Texas, brood rearing is entirely suspended during a dearth of nectar in midsummer, as you describe. During a dry season here, there is often a break in brood rearing in late July and early August, and at Washington, D. C., we had considerable trouble in having strong colonies in the fall on account of a slowing down of brood rearing in mid-summer. In the North brood rearing usually continues right through and colonies are much stronger there in the fall than further south. It is well known that bees can greatly prolong their hives in mid-summer during a broodless period, as you describe, just as they do in winter. We have had many reports from the tropics describing the behavior of bees during a prolonged broodless period during the dry season when bees are able to prolong their lives far beyond the normal span when they are active. The most dangerous situation following a broodless period in summer is the advent of a fall honey flow when colonies often go down to mere nuclei by wearing themselves out in the field. In some cases, a meager fall flow requiring much searching to get a load of nectar is even worse in depleting the population of a colony. Some of the most severe winter losses in the history of beekeeping in this country have occurred in the middle latitude after such a season as just described above. It is well known that these old bees are able to survive the winter, since they have not aged during the summer, except when they wear out their lives in a meager fall honey flow.—Geo. S. Demuth. [The above comments by Mr. Demuth appearing in a letter to Mr. Harrison, dated January 24, 1934, are interesting and significant.—Editor.]

Are Low Prices Such a Disaster?

Hy. W. Sanders

Broader Market Base, Mass Production with Lower Unit Costs May Help Solve Beekeepers' Problems

When we first started to keep bees in Manitoba some 20 years ago, local honey was a distinct novelty, and such crops as were produced were easily sold at a fancy price. Our honey here granulates with a fine, smooth grain, is white in color and exceptionally delicious in the granulated form. If liquefied it is clear and light in color and compares well with the best of honey from other regions. These qualities together with the interest that is always shown in a new enterprise, was all that was needed to move our small crops. We used to get 75 cents for a quart sealer, and when the wartime peak prices came along we got a dollar for it. The glass cost about 5 cents, so we netted 95 cents for about three pounds of honey.

Great Changes Within 10-Year Period

We left the bees for 10 years and went into another line of business, but last year we returned. We found that in the meantime honey prices had fallen to around 10 cents a pound retail, and from seven to eight cents wholesale. Beekeepers were much inclined to bemoan the

fact and to look upon the decline as a major disaster to the business.

But we found also that the wintering problem, which in the earlier period had been our great difficulty, was about solved. Better cellars and better feed had enabled beekeepers to carry through their colonies with a success that can be almost relied upon where all factors are under control. Outdoor wintering has made progress that would have seemed incredible a few years ago. Where the beekeeper distrusted outdoor wintering and had no suitable cellar for indoor wintering, he had discovered that he could buy his bees from the South in package form for the cost of the honey used for wintering, and thus take no chances.

The result of these developments has been that beekeeping has expanded to the proportions of a major industry, with a yearly production running into millions of pounds, and quite a number of carlot producers. Instead of honey being a superluxury, used by the few, we find that it is on every grocer's shelves, and frequently advertised as a "special" at reduced prices —a sure indication of wide demand. The honey is well packed in standard cans or glass containers that look clean and contain liquid honey with a good color and an attractive label. The comb honey is in cartons and appears attractive. *And people are buying and eating honey as a matter of course.*

Mass Consumption Permits Mass Production

Last year the authorities in charge of relief work among the unemployed found by test that honey gave them far better value than the syrups they were using, so changed to honey. This year, in some of the road camps for single unemployed men, they have found the same thing. One dietitian reported that the honey put on the tables was about the same price as syrup, but that it lasted much longer. In other words, the men got more flavor for the money spent.

It seems to stand to reason that a broad market for honey at modest prices based on its use in thousands of homes and in successful competition with other foodstuffs in the same class, presents an opportunity of no small importance to the beekeeper. He must, of course, be prepared to study production on a large scale, to adopt every labor-saving device, and to keep more bees. He must be able to produce on a carlot basis where now he is producing on a trailer basis. Production costs must be driven down to a point where honey at present prices, or even lower ones, will yield an adequate income. We must produce honey as Ford produces cars, at such a cost per unit that lower and lower prices can still yield better profits.

Consumers Set the Prices

Co-operation can do many things. It can insure a good pack, and build up public confidence in quality. It can assemble shipments and put them on the market in orderly fashion. It can advertise honey and explain its uses as the individual beekeeper never can. But in the last analysis co-operation can not lift prices above the level that is determined by competition with other sweets, and the buying public constitutes a court from which there is no appeal.

So we feel that low prices and a wide consumer demand are an opportunity and not a disaster. Instead of complaining, let us overhaul our methods and try to produce more and better honey. If we cooperate, let it be for the purpose of putting more and more honey on to the tables of more and more people. That way lies success.

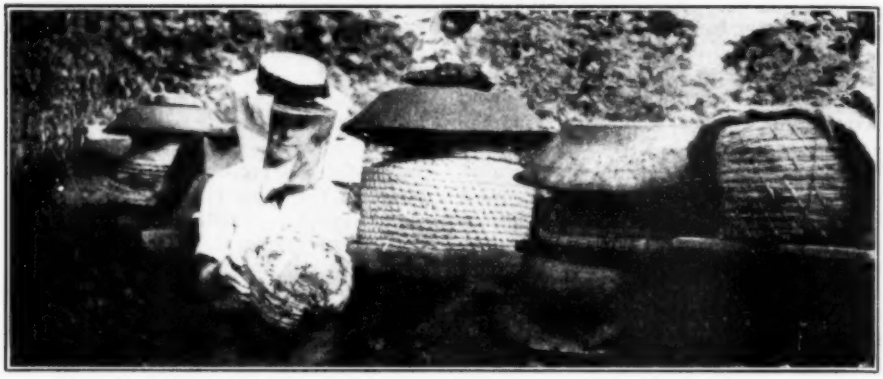
Morris, Manitoba.

A Glimpse of Old Time Beekeeping

A. H. Bowen

The Quaint Old Beekeeper in His Bee Garden
A Picture of Contentment

In this intensely practical age even the honeybee has not escaped the industrialism of our time. As new methods of honey production are found and applied the quiet living bee of old Dr. Watts' day must needs work harder and longer to keep the honey extractor busy. It is an age for sweet things, of which honey is



A straw cap of virgin honey from the bee garden.

one of the most gracious. Yet, side by side with this high-pressure beekeeping the old style still lives on, tucked away in the hamlets between the fold of the hills the half-timbered cottage warm under the thatch, and the gay old flowers the bees love—there you will come across the hives and the system which has not altered much since the days of long ago.

The Old Bee Garden

Let us take a glimpse into the bee garden of the old keeper whose "keepering days" are numbered. His gun still hangs in the rack above the open hearth. He is hale and hearty despite his rheumatism—a common country complaint hereabouts. He stands erect in corduroys and long shooting jacket. He lives along with nature for a companion, in the cottage on the verge of the wood, and from the low doorway one can see the skeps as they stand flanking the pathway. Now, there are ways and words which belong entirely to the bee garden. And a long acquaintance with bees and their moods give him an understanding. If it were possible for bees to form an acquaintance with man, surely it is here.

"'Tis a grand day," said he by the way of greeting as I entered the gateway. "I've bin watchin on 'em taking in that thar bee-bread. They're at work on the 'sally' by the fifty acres," pointing to a broad ground where three teams were preparing for the spring corn.

"That's my best lot," he went on, pointing to a stock with its hackle set at a jaunty angle. "George Dadge found 'em hanging in the hedge at Spring Bottom last May. I'd half a mind ter let 'em go,

The queen-rearing apiary of A. H. Bowen.

but George has a soft heart, and he sed, 'Ive 'em, if only to stop the lads a-potting at 'em.' So I did an' how they did work. They bin a cleaning out," said he. Sure enough there was much debris drawn to the entrance and bees were flying off with a corpse or two.

A Queenless Skep Discovered

As his keen eye wandered down the line of bee hives it caught one of the skeps—shaded to be sure but not enough to account for the quietness.

"That's a curious lot to me," he said, "no bee bread going in; no workers flying off. I don't believe they got ere a queen. Let's have a squint at 'em."

Waiting a moment while he filled his pipe afresh he lowered his head and blew a puff or two in at the entrance. There was a fearsome roar. Turning the skep mouth uppermost he guessed the truth, "Dang me, if they a got ner a queen. Let 'em bide. I'll duff the first swarm into 'em. That'll put 'em in good fettle I'll be bound."

I stepped back as he regained the flagged path wondering what was coming next. "Like to see me gin 'em some victuals?"

Upon my nodding assent he produced a couple of troughs of elderwood from which the central pith had been removed. These he pushed under the low doorway of the hive. Next from a brown jug he poured in a liquid fluid food. "This will put 'em right," said he, "this is syrup, sugar and water, and a little old honey. I start 'em on this. Later on they have a saucerful. I slip the saucer under the skep. By the morrow every bit is cleared."

Modern hives—"boxes," the beeman calls them—give little indication outwardly at any rate of wanting to swarm. Not so the kindly skep. From early morning the bees will "hang-out" in a great brown mass all over the face of the skep, and down from the stone.

Sunday Morning, a Favorite Swarming Time

Why do bees choose a Sunday morning for their adventure? This question has never been satisfactorily answered in the bee garden. Perhaps they know their owner is likely to be handy to hive them. Or is it the clang of the rusty clappers that they love? At any rate, this is the signal. With a swirl they are in the air. Then taking down the burnished warming pan from the wall and the heavy door key the beemaster will set up the "tanging"—the metallic sound drawing the bees near to the bullace tree. Here, the small ball of a few moments ago has now grown to the size of a bucket, the shining black bodies throbbing with excitement.

Now, the moment to secure them has come. Taking a "skip" with two cross sticks inside to support the bees, it is freshened with a "dressing" of elm leaves and beer with a dash of honey. Working it up to cover most of the cluster, a hearty

A typical English apiary.

shake trundles the mass into it, and it is lowered gently to a shady spot.

Next come the "cuts and smarts," commonly called after-swarms, funny little lots. As fickle as an English summer they come out early and late and alight so high up that the old beeman must use his longest ladder to reclaim them. Sometimes when the swarm sails out of sight over the meadows the beemaster never attempts to follow the bees.

"'Tis gone to the west for a change o' air—perhaps 'tis the gypsy blood in 'em. You mind how Joshua and Caleb were the only two who ever got to the land of milk and honey. Yes, the Joshuas and Calebs of that swarm found their land o' promise. Well, luck go wi' 'em. Yes, we shall have a change afore long, praise be."

Swarming over, the bees spend the long drowsy days amongst the clover beyond the village, or high up in the shady limes against the churchyard.

So that the hives grew weightier week by week. As I pondered over all this and chatted with the old beeman over a glass of his special mead—brewed as a connoisseur would brew it—it seemed that, at any rate here, we were at home with mother nature. And this much could be said; a season in the bee garden is like a tale that is told of labor tempered by love, softened by the low sweet song of the bees as they swarm, or the drowsy whisperings of the skeps in their winter quiet like the soft sigh of wind in the firs above.

Cheltenham, England.

Echoes of the Langstroth Meeting

E. R. Root

Memorial to Inventor of Movable-Frame Hives. An Amazing Growth of Sweet Clover

The Rev. L. L. Langstroth, the man who revolutionized beekeeping by his invention of the hive and frame bearing his name, was buried at Dayton, Ohio, in October, 1905. In recognition of his great service to beekeepers, Penn G. Snyder, Secretary, and Ward Reese, President of the Montgomery County Beekeepers' Association, called a meeting of beekeepers for July 14, at the home of John Erbaugh, about a mile north of Johnsville, near Dayton.

The meeting was well attended and among the distinguished guests were a niece of Mr. Langstroth, Mrs. Julia C. Moore, and her daughter, Virginia.

The writer, who had sat at the feet of this great Gamaliel of beekeeping many a time, was commissioned to tell of his life work and the importance of his in-

Fig. 1.—Montgomery County beekeepers listening to County Agent Cunningham expound the virtues of sweet clover for dry years.

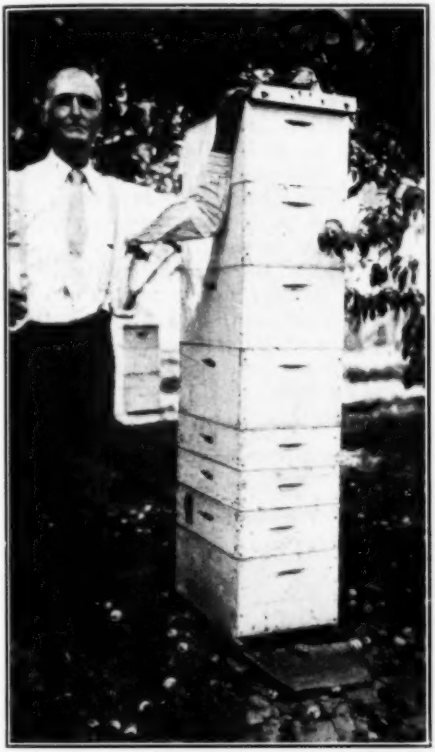


Fig. 2.—John Erbaugh and one of his best colonies in the sweet clover area.

ventions. This, together with pictures of his descendants, will be given at another time.

A Live County Agent Who Advocates Sweet Clover to Cure the Effects of Drouth

Dayton and vicinity was one of the favored spots in Ohio where there has been a good honey flow from sweet clover. A tour of one or two of the roads in the county seemed to indicate that there was more sweet clover in Montgomery County than any other county or locality in the whole of the United States. The Dayton vicinity had not been especially noted in past years for its honey production, so why this sudden change to a county that perhaps leads all other counties in these United States for its sweet clover acreage? The answer is in a county agent progressive enough to preach sweet clover and alfalfa as the solution of the problems resulting from a series of dry years or drouths. I am glad to introduce this county agent, Mr. James Cunningham, who in Fig. 2 is addressing the beekeepers at this field meet.

Mr. Cunningham, like many another real man who can see a vision that will solve the difficulties that come from drouths, is a modest personality but evidently accepted by farmers who know what is good for them. The result of his preaching sweet clover and alfalfa is shown particularly in Figs. 2 and 4.

Moses of old led his people to a land flowing with milk and honey. Cunningham is one of the modern Moseses who is not only leading his people but blazing the

Fig. 3.—James Cunningham, Montgomery County Agent, speaking at Langstroth Memorial meeting near Dayton, Ohio, on the advantages of growing sweet clover.

way for other county agents to do the same.

The county agents all over the state of Illinois, says Mr. M. G. Dadant, of the American Bee Journal, are preaching that same gospel of sweet clover. Any one who drives through that great state on Route 20 will see the verification of Mr. Dadant's statement. In the same way the county agents of some other states are beginning to see that the problem of drouth and no pasturage can be met by the planting of sweet clover and alfalfa.

Every beekeeper wishing to improve his bee range should see his county agent and explain what has and is being done in Illinois and Ohio.

When we see constantly in the daily papers the awful conditions in many parts of the great West that could grow sweet clover and alfalfa, one is led to wonder why our dear Uncle Sam should not send out men all over the country to preach the gospel that Mr. Cunningham is preaching so successfully as a cure for drouth.

Where no sweet clover or alfalfa is grown in Ohio there the farmers are feeling the pinch of drouth. Where these two legumes are in the soil, there is prosperity, like that shown in Fig. 4.

Mr. Chas. A. Reese at this meeting covered bee diseases, honey grading and the effect of drouth in Ohio. Prof. W. E. Dunham discussed pollination and particularly the important and necessary part played by bees.

Medina, Ohio.

Fig. 4.—Fat cattle feeding on Montgomery County sweet clover. This is surely a land flowing with milk and honey.

Why Drones Do Not Possess a Sting

Dr. K. Brunnich

A Fable Relating How the Idle Males Receive Their Just Deserts

When God created the bees he gave to each of the three kinds the organs they needed for being able to maintain their state. The queen got a sting to be able to rid herself of a rival, for already in those times one female could not endure another one in the same housekeeping. The workers and drones had all the tools necessary for the different kinds of work; so they gathered the pollen, the bee bread in their baskets, they sucked the nectar and transformed it into the wonderful ambrosia called honey, which gave them vigor, and warmth in the cold season. In their body they prepared the wax which enabled them to build the many thousands of cells useful as cradles for their youth, as their store rooms, and at last, if

a colony was condemned to die, as coffins. They collected resins for filling the cracks in their house. Besides this, the drones had the task of defending their home. They were stronger than the worker-bees and possessed a venomous weapon to kill their enemies.

For a long time the little state lived happily and willingly. Each inhabitant worked for the whole colony. They thrived and increased and all went well. They did not harm anybody. On the contrary, their nourishers, the flowers, the shrubs and the trees were highly indebted to the bees for their kind offices in the transport of pollen which enabled those plants to produce abundantly good and efficacious seeds. The drones also helped assiduously in the household and abroad and when an enemy would approach the loved home, they fought him off or killed him, be it a wasp, a hornet or even a honey-coveting bear. So all went at the best and nobody had to suffer.

Unhappily the drones soon became aware that they were not only stronger than the worker bees, but that they possessed a dreadful weapon, while the latter were defenseless. Their chief, the drone "Mormo," assembled one day his comrades and made a speech to them.

"Why shall the workers," said he, "get as much honey as they desire? Are we not much stronger and more beautiful than they and what would they do, if we were not here to defend the colony? Let us watch rigorously our golden treasures and let us give them only as much of honey as they need for the preservation of their lives and for their labors. Besides it is not necessary that they spend so much time for playing and dancing, it is better that they work more. As we are the stronger ones, we can force them and so we will do."

An exalted shout of applause was the answer of the drones to their leader, Mormo, and thus indeed they acted against the worker bees. In this manner it went on, although the poor bees fatigued themselves almost to death; the hard work of the poor suppressed slaves shortened their lives, so that in summer they were completely worn out in six weeks. But as the drones continued to work, to gather honey and pollen, the colony was able to hold out.

But after a short time the drones preferred to linger about in the bright sunshine and to pay their court to nice young queens instead of working. In the hive they lounged and reveled and tyrannized the bees. In conformity with their governor, Mormo, they found that it was beyond their dignity to labor. Exactly considered, labor was an ignominy good only for the worker bees. Mercifully they would continue to do their military services, but besides this they would enjoy their lives without sweating.

Indeed, they began to idle in the hive and to amuse themselves in the sunshine. On the other hand, the worker bees worried themselves to death. They had to do all the housework alone; they nursed their younger ones, they had to keep good order and they were obliged to care for food. Soon they were no longer able to supply themselves and the drones with enough provisions and they as the weaker ones were obliged to hunger and the colony declined in number and wealth. The silly drones did not comprehend that they were going to perish if matters continued as till now.

The queen, called "Rooroo," had observed sorrowfully the fatal development of the affairs and when she was near to desperation, she decided to go to God to complain to him of the great trouble of her people. So she did and graciously the Lord heard her. "My dear Rooroo," he said, "I can not deliver you completely of the drones, because they are necessary for your state, but I will take away their sting. For the defense of the hive I will give the weapon to the worker bees, but for preventing abuse every bee which loses its sting after having stung will die. Thus matters will soon go well again."

Satisfied, the queen flew home and lo! when she sat down on the alighting board she saw how the bees drove out of the hive all the drones and with them their chief Mormo. As the season had advanced, the drones were superfluous and the bees delivered themselves of the useless gluttons. The drones could bluster and scold as much as they would, but the bees were merciless and the idle inhabitants of the hive got their well merited punishment and came to a shameful end.

Since that time the bees have lived quite happily. Willingly they nurse the drone babies in the spring, but when nature has no longer anything to offer to the busy amazones, they push the idle males out of the hive, because they had not learned to work again.

Nidau, Switzerland.

From the Field of Experience

G. S. DEMUTH'S AMAZING SUCCESS

As a Comb-honey Producer, He Made His 200 Colonies Pay—and Pay Well.

When Geo. S. Demuth left the Bureau of Entomology in 1920 and became editor of this journal it was agreed that he was to have one month with his bees during summer. That was the arrangement he had with Dr. Phillips while he was in the Bureau of Entomology.

That one month with his 200 colonies at his old home in Peru, Indiana, kept him in practical work all the time he was working in Washington and at Medina. It was invaluable to both himself and the people for whom he worked.

The publishers of Gleanings have always maintained the position that its editors must have active field work among the bees as well as at the desk preparing copy for the next issue, and so when Mr. Demuth proposed that he have one month with his bees the proposition was readily accepted.

Mr. Demuth practiced what he preached. He not only did the work among his own bees but he constantly counselled with Mr. Deyell, who had charge of our 1000 colonies of bees. He laid out experimental work for Mr. Deyell and then watched the results.

The amazing thing was that he not only practiced what he preached, but he taught others, including Mr. Deyell, how to keep bees and make them pay in dollars and cents. He contended that in order to make the bees pay, it was necessary to cut down on the labor item among the bees. Too many beekeepers, he said, do unnecessary work at the wrong time.

The publishers of this journal in a circular letter soliciting subscriptions for this journal put out this statement:

> Here is something that will interest you—and is not generally known. There is a beekeeper in this country who owns 200 colonies of bees, works with them only one month in the year, and yet makes as much out of them as the average farmer in the rich corn belt of Iowa or Illinois makes off a high-price 200-acre farm with all its buildings, stock and equipment, in a whole year. This man is George S. Demuth, editor of Gleanings in Bee Culture. He makes big money on his bees because he knows how.
>
> He will tell you in Gleanings in Bee Culture how he keeps bees and what he knows about beekeeping. His department of questions and answers every month is alone worth the one dollar you pay for a full year's subscription.

This statement of making as much money in one month with 200 colonies of bees as a farmer with 200 acres will make in eleven months, was seriously challenged by one of our good friends. He didn't see how it could be done and perhaps it is small wonder. To this Mr. Demuth modestly replied in December, 1924; but none of his associates saw the answer until after his death, ten years later. As it throws light on the subject and especially as it shows some tricks of the trade, we are glad to reproduce it even at this late date:

December 24, 1924.

Dear Mr.——

Replying to your letter of December 18, I reluctantly gave my consent that the paragraph you marked in the circular letter concerning the work in my own apiaries be sent out. My objection was two-fold: first, that it sounded too much like bragging and second, that it is nothing to brag about. I have been surprised, however, from several letters that have come in that some people have doubted the truth of the statement.

I think that you know that my location is a strictly clover location and that the honey flow is usually only a few weeks in duration. Under these conditions it is not at all difficult to crowd all of the work of the year within four or five weeks' time, especially if permitted to split the time, allowing three days to go back and pack the bees in October.

Perhaps the beekeepers you refer to who question this statement have in mind not only the production of the crop, but also preparing it for market and selling it. While some seasons I am able to prepare a considerable portion of the crop for market, other seasons I have prepared but little of it for market, feeling that I have done well to get it all off of the hives and store it in the honey house. You will note that the paragraph in question does not say that the honey is graded, cased up and sold all within the one month. It refers only to the production of the crop.

I think I have told you of one little shortcut that has helped greatly in operating these colonies, namely, the food chamber. I do not go to Indiana to care for the bees until the honey flow actually begins. Sometimes I have been able to have the bees unpacked before I go, but other times I have had to unpack them myself. The second story, or food chamber, is taken out at the beginning of the honey flow, leaving the oldest brood with the colony, the queen is clipped and two or three comb-honey supers are given. The removed hive body is then set aside for a nucleus provided it is heavy with honey. If not, it is tiered up with others on certain colonies not used for comb honey production. Later these piles are torn down and nuclei are formed in these food chambers which are not well filled with honey. A ripe queen cell is given to each one and later they are examined to see if the queens are laying. These nuclei are distributed throughout the yard, one being placed beside each colony. At the close of the season, or, rather, just before the actual close of the honey flow, the comb-honey supers are taken off and these nuclei are united with the established colonies. Since each of these nuclei have a young queen, and nearly 50 pounds of honey, this uniting process requeens the colony, takes care of all late sum-

mer and fall feeding (the locality does not furnish a fall honey flow), takes care of feeding for winter, takes care of all spring feeding and takes care of the requirements as to room for brood rearing in the spring. In other words, a half day in each apiary near the close of the honey flow does all of the late summer work, the fall work except the packing of the bees, the winter work and the spring work.

In some cases I have been able to have the bees packed by hiring some one to do it, but I find it more satisfactory now since I am nearer than when at Washington, to make a trip to do this work.

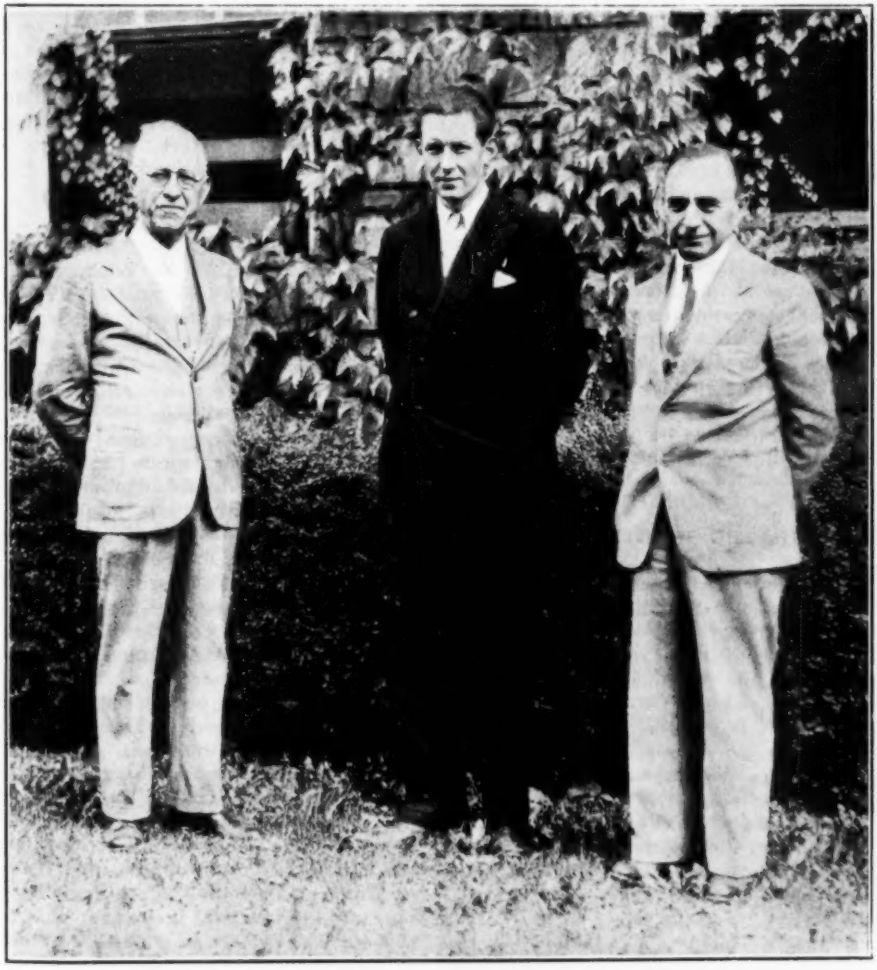
There is no more of the story to tell so far as the circular letter is concerned unless it be explained that this does not include scraping, grading and selling the crop. You will note that the paragraph says "work with them only one month in the year." This means work with the bees only one month in the year and does not refer to the marketing end.

I do not consider this anything remarkable. When I see what real extensive beekeepers are doing my little 200 colonies look like a small affair indeed. If I had to spend more than one month working with the bees to produce a crop of honey, I fear that honey production in my locality would not be very profitable.

Please tell your frineds who are wondering about this that there is nothing wonderful about it. It is just plain, ordinary hard work for a little while during the summer.

Yours sincerely,
GEO. S. DEMUTH,
Editor.

A less modest man than Mr. Demuth would perhaps have given this letter to the public at the time. That he did not was probably because he thought he would be bragging. I perhaps do not need to add that every statement made in the circular is true. I know he was at his desk practically eleven months of the year. I know that he would be away the equivalent of one month of the year—not necessarily all at one time. I saw his big crops



E. R. Root, Kees Matthes, and Geo. S. Demuth, as he appeared last fall.

of the finest comb honey ever produced.

This explains why Mr. Demuth made such a good editor. He demonstrated with his own bees what he taught others to do so well in these pages. Mr. Deyell, H. H. Root and the writer had frequent conferences with him during the thirteen years he was with us.

Pardon the egotism that prompts the prophecy. His work will not stop. It will go on. Mr. Deyell, or as we call him, Jack, is in constant touch with both of us. He is seeking advice from scientific as well as practical men in the field. He is a modest chap, like his teacher. He does not know it all. He is willing to be shown.

It was a little difficult to get Mr. Demuth to pose for a picture; but whenever a celebrity or a representative came here from a foreign country he would as a courtesy stand out in front of the office.

Last summer Mr. Kees Matthes, son of Hans Matthes, Brenkelen, Holland, who had just come from Cuba, stopped at Medina. As he and his father are perhaps the best known beekeepers in Holland, Mr. Demuth and the writer invited him to step out in front of the office that we might take his picture. He objected to standing alone so H. H. Root took pictures of all three of us. Mr. Matthes visited a number of beekeepers in this country and then went on home.

It is perhaps not out of place to say that these foreign representatives always asked to see Mr. Demuth. They considered it a privilege to be photographed with him.—E. R. Root, Medina, Ohio.

GRANULATED HONEY PREFERRED

Here's How They Process Honey in New Zealand

Most of the honey consumed in New Zealand is sold in granulated form, liquid honey being considered by most people as being too messy to use. No liquid honey can be exported from New Zealand as such; it must be all granulated firm, perhaps to be reconditioned to serve the tastes of the ultimate purchasers.

The finer and smoother the granulation, the higher the grade, other conditions such as flavor, color, and freeness from scum and air bubbles being equal.

When the honey is placed in the tank it is strained and clarified by allowing the air bubbles, fine grains of wax and pollen to rise to the surface, the honey being skimmed until no more scum rises. The honey is well stirred several times to assist in the clarifying. If the temperature is very changeable, granulation may start in a few days and it may be coarse or fine, usually coarse. To be sure of a fine granulation we mix ten pounds or more of finely granulated honey as a starter to every half ton of liquid honey, and if thoroughly mixed the whole tank will granulate fine and smooth.

When granulation has well started the honey can be run off into whatever containers are used.

We use containers holding from one pound to sixty. If sixty-pound tins have been allowed to granulate coarse, these can be liquefied by placing in water 140° F. until melted, then pour into a tank and use the fine starter as above.

If the small producer has no starter suitable he can buy some or try grinding down some coarse honey.—G. H. Keen, Woodbury, South Canterbury, N. Z.

WATER STOPPED SWARMING

Three Buckets of Water Dashed on Front of Hive Did the Trick

It has been carefully pointed out that colonies of bees, especially when very strong, need plenty of room and ventilation in order to arrest swarming, and the weekly process of opening the hive to look for, and destroy queen cells has been much stressed, time and time again. It would seem all kinds of practices and precautions are sometimes useless—the bees just will swarm—they can not be brought under any fixed laws of control.

Two colonies here wintered well and became abnormally strong during fruit bloom. They were examined most carefully once a week and all queen cells destroyed. Still the tendency to swarm manifested itself in one of the hives. All activities ceased suddenly and they covered the entire front of the hive.

Taken unaware and unprepared, it was impossible to wait for the issue, so drastic measures were resorted to. Water was employed. The hose playing on the bees had no effect—they clustered even tighter. But a pail of water dashed on them suddenly and in such a manner that it wiped the entire front of the hive clean of bees had the desired result.

At first, after the shock, they quickly

assembled again only to undergo the same treatment. This was resorted to three times, with the result that after the third treatment, they went quietly into the hive, and from then on gave up all attempts to swarm. A week later they started the process all over again and received the same "dashing water" treatment, and with a like result. Now everything is normal and they are working vigorously, so much so that 137 sections were taken from the six supers on the hive.

This week the other colony started to swarm in like manner. They received four treatments before they were convinced that old homes are better than new, even if some conveniences are lacking.

This water process takes only a few minutes, and is most effective. It eliminates all labor of preparing new hives, chasing after swarms or dividing colonies, just when the honey flow is at its height. This dividing of forces is just what we do not want to do, as it is well known it is the strong "boiling-over-with-bees" colonies that store the big crops of surplus honey.—Adelaide Combs, Brooklyn, New York.

HE MAKES MONEY SELLING HONEY

Tom Schuler Uses His Head and Builds Up a Nice Honey Business

When his job dwindled down to four, three, and finally two days a week, with income half the outgo, and odd jobs were impossible to find, Tom Schuler got worried. He simply would have to make a little extra money, but how? He racked his brains for some time, but the puzzle baffled him until one morning it came to him quick as a flash—he would sell honey.

Once upon a time in the place where he worked, some one had taken enough orders for honey on a co-operative purchasing plan, all chipping together so they could buy it direct at the rock bottom price. Why not buy honey at wholesale and sell it at retail, and pocket the profits?

No sooner thought than done. So he stopped into several grocery stores, both chains and independents, and got some idea of what they were selling for, and what kind of honey they stocked, if any. Then he had some misgivings about his idea. Many of them were selling honey, too. What chance had he?

But another thought occurred to him—they were not pushing it. With them it was simply one of a thousand products to sell. So he took heart again. He would take a chance on specializing and see if he could not sell honey in small and large quantities in his town. Each customer who was satisfied would be a repeat, and might recommend him to neighbors, friends and relatives, and thus his business would grow.

So he placed an initial order for a case of comb honey and a few 60-pound cans of extracted honey, as well as the retail containers, labels and paste, in order to put up the honey for market during spare time. He figured what he would have to sell it for to meet store competition, and at the same time make the price attractive, and yet show a nice profit.

Then he put a classified ad in the newspapers, and he was surprised to receive a number of telephone calls. He delivered anything from a single comb to 100 pounds of liquid honey. Some people even came and took it away. The 100-pound buyer gave him another idea—he would solicit restaurants and hotels, cafes and tea rooms, and sell them at wholesale and still make a profit. His home trade grew gradually. He soon waxed enthusiastic and adopted business principles, printed a small advertising circular about his honey, and included a few recipes.

He found customers steadily repeating. They recommended his honey to their neighbors. This gave him another idea, and when he called to deliver some honey he would put an advertising circular in the mail box of the neighboring house, or slip it under the door, or, if he felt in particularly good spirits, he took a chance in having a door slammed in his face, and would ring the front door bell, hold a comb of honey in his hand, and more often than not he was surprised to see the door remain open and the prospect interested immediately. More often than not a sale resulted and a new repeat customer was thus added to the list.

And he kept a complete list of customer's names and addresses in a little alphabetically indexed notebook which he carried in his pocket, and in the back of which he kept their names by streets. In the alphabetical list he kept a record of what he sold each customer from time to time, thus having a complete record of all his transactions and if she quit he put that down, and then studied his problem

of "quits" and decided to follow them up again in six months.

And so Tom Schuler learned one trick of the trade of selling after another, until he became a real business man, and built up a nice honey business—and it was all done in a little over six months' time.

Today he has a regular established trade and it keeps him busy practically all of the time taking care of old customers and digging up new ones, and he is no longer worried about getting a job.

In fact, he is now thinking of trading in his second-hand car and buying a new automobile, and putting on it his name, address, and the fact that he sells honey, so that it will be a constant advertisement everywhere he goes.—Fred E. Kunkel, Chevy Chase, D. C.

FOR THE ROADSIDE MARKET

Keeping Honey Signs Up-to-date Increase Drawing Power of Stand.

Signs play a very important part in the drawing power and attractiveness of a roadside stand. Honey signs seem to have lagged far behind other business signs. An inexpensive but attractive stand can be built for a few dollars.

The sign illustrated is set as close to the road as possible and can be seen plainly at a distance of nearly one-fourth of a mile. Mounted on four-by-fours, seven feet high, the sign is eight feet long and two-and-one-half feet wide. The letters are seventeen inches high and eleven inches wide. They are cut from three-quarter-inch material and are two-and-one-fourth inches wide.

Fig. 2 shows how these letters are cut out easily and to the best advantage. The front edges are rounded. However, care should be taken not to round any edges where the letters join. Careful study of the picture will help to point out these places. The letters are mounted on an ivory colored background of galvanized iron. Pressed wood may be used to very good advantage. Nails may be used to fasten the letters in position but screws were used for these letters. Both faces of the sign are mounted on a wooden frame, Fig. 1.

The underside of the letters are given a coat of paint for protection. All other

Fig. 1.—Modernistic sign, gaily colored, which is sure to be seen by passing motorists.

parts of the sign are given two coats of ordinary outside paint and a finishing coat of enamel. The enamel coat pays well for it stands up much longer, is shiny and makes a much nicer looking sign.

Before any paint is applied to the galvanized iron it should be washed with vinegar to assure a clean surface to which the paint will adhere without peeling off.

In painting the letters much time and trouble will be saved by grasping the piece

Fig. 2.—Parts of letters ready to fit together.

firmly in one hand, thumb on top, painting the edges and flat surfaces to the thumb, then placing on drying rack to finish.

To be fully appreciated the sign should be seen as the color combination can not be brought out in a picture. In this the background is ivory or light cream, the modernistic strips at the side are yellow, orange and Chinese red. The letters are also of Chinese red. Display parts and uprights are painted alternating cream and Chinese red. The frame is red.

Tall sixteen-ounce jars are used to display the honey to the best advantage, though most sales are made of the five and ten pound pails. Thus a goodly portion of the crop is marketed.—Benj. Nielsen, Aurora, Nebraska.

HONEY IN SHALLOW FRAMES

This Back-lot Beekeeper Has No Trouble Selling His Honey

I read with considerable interest the plan of H. L. Rushing of Nashville, Tenn., of selling his honey direct from the hive in shallow extracting frames. I am very glad to know that other back-yard beekeepers have taken up this selling idea which up to this time I had led myself to believe was exclusively my own.

I am a railway station agent in a small country town and my apiary which is located directly in front of and across the tracks from my office, consists of four colonies this season.

To my eye, a slab of honey in a shallow frame, evenly built and well filled is as pretty a picture as any old master could put on a canvas and I find that it is practically irresistible to a great many people who would not take a second look at a small section of honey, however perfect, but always stop to admire a large slab of it and seem to take a delight in carrying it home. I have for the past three seasons sold out my entire surplus direct from the hive in shallow frames and could have sold much more if I had had it. My customers are the trainmen who work past my station, commercial traveling men and some of my neighbors and townspeople and also an occasional tourist. I save the cardboard cartons in which I buy single supers, frames and comb foundation and these cartons are just long enough to hold a shallow frame and the various sizes accommodate from one to three frames. Of course, I always wrap well in paper before placing in a carton.

I feel that I am not in any way hurting the large beekeepers but rather setting a mark for them to shoot at, as I, after riding my hobby, make it pay me a profit besides. I have, however, hesitated to enlarge my outlay, fearing that I might have difficulty in disposing of my honey by this particular method of selling and I plan on increasing only a colony or two at a time as I build up my outlet. My apiary must remain for the present at least strictly a side line and besides it has seemed to me that this method of selling could work well only when operating a limited number of colonies. I am, therefore awaiting with much interest the result of Mr. Rushing's experiment with 30 or more colonies. "Good luck to you, Mr. Rushing."—Geo. M. Penn, Shiocton, Wisconsin.

COMMENTS ON CURRENT ITEMS

How to Avoid Overheating Honey

The advice on page 458 regarding much of the honey sold in tin pails being injured by overheating is well taken. Too often the delicate flavor of white honey is ruined and the color darkened or turned to a light amber.

For handling honey we now use the flaring 30-pound pail with slip top. Our honey heating tank holds nine of these pails. One should have a good tested thermometer. A red mark can be made at the danger point (160°). If the thermometer is, say, one degree high, mark it at 159. We have a small galvanized tank holding two pails which we use when a small quantity of honey is to be heated. We set the filled pails on a slatted bottom in the small tank with water nearly reaching the top of the 30-pound pails. When the honey reaches the 160° mark we take the pails out. It is a good plan to set them in cold water at once, leaving them there until the honey is slightly lukewarm, so it will run easily through the strainer. Any froth that may appear at the top should be skimmed off soon after it is strained into the filling tank.

The advice not to leave the containers (glass or tin) in a closed packing case while the honey is hot should be borne in mind. I once put a large quantity in glass sealers in the cartons they came in and had to sell the light clover honey for amber.

The article on page 447, "One Way to

Sell Honey," was good reading. We have for a number of years sold honey in shallow super frames and have found it profitable. The customers did not find it convenient to cut the combs of honey from frames on to plates. It was a messy job, to say the least, and while we could sell a goodly number it struck us that by making two upright divisions in the frame, dividing the frame horizontally into three parts, the customer could cut the honey out with a thin knife on to an ordinary dinner plate.—J. F. Dunn, Ridgeway, Ontario.

SPINSTER JANE SAYS—

If one were to keep bees a lifetime, I suppose there would always be something new and interesting to observe about these busy little workers. While our "honey-boy" kept them I was rather disinterested, thinking more of keeping out of their way when they were irritable and out of sorts, a condition rare in females, I'll say, even in honeybees. Now, however, I am a proud owner and to me their every vagary is new and wonderful.

Last week I noted something new to me, but first I must tell you what my package bees did their very first season.

We extracted our honey the latter part of July, and though the yield wasn't great, it was quite satisfactory to me, and the honey most delicious. We had about 60 pounds of it—the thickest honey I ever saw, not crystal clear, yet not amber, either. I set aside half for ourselves and sold the other half at 14 cents per pound. It was readily taken, and now I'm not sure that I charged enough.

And now for an experience new to me. We put Porter boards on, leaving them until we were sure all bees would be out, then set about the businss of extracting in outer cellar, where extractor, engine, etc., are kept. Bees kept flying in while the extractor was running, lured by the smell of the honey. When finished, we darkened the room, and the bees flew to the light —a window in the entrance passageway. There they bunched, and though we opened the window, they refused to leave.

I was greatly surprised at such stupidity and stubbornness in females. The window was taken out completely, still there they hung, and in all probability there they are still hanging, if alive.

Are they on strike? Are they so enraged and discouraged since losing their store of honey, that they have quit on the job? It may be another case of Mahatma Ghandi on hunger strike or fasting, but wouldn't you think females would have more sense than that? No, I'm positive the name has done it. Those bees, the cantankerous minority of my workers, are voluntarily going on relief. They are Madam Relief's progeny, and are running true to form. Why, oh why, did I ever give my queen such a name!

But—I'm almost certain Madam Relief is no more. I fancy she has gone to the happy hunting ground, or, wherever it is good bees go when they die. Let me explain.

All during the sweet clover honey flow, my bees were tireless workers, never thinking of swarming. Then came the confiscation of their honey, and presto! Those queens decided to renounce all claim to their impoverished kingdoms. They abdicated their thrones at the same time. More than that, the two swarms alighted on that favorite alighting place, the cranberry bush. The N. R. A. queen and her ladies-in-waiting took precedence over the more humble Madam Relief and her satellites, selecting a branch slightly higher.

We made all preparations to hive the two swarms. The bush harboring the N. R. A. colony was given a determined shake, and down they came in front of the waiting hive. Down also came the Relief ladies, and wonder of wonders, all entered the new home amicably, and in perfect order.

So you see I am afraid it is all up with Madam Relief. She surely has fallen a victim to the N. R. A. stings or squeezes, and is no more, or she and her faithful ones may have swarmed out again on their own. I am waiting to hear definitely.

Instead of two smaller colonies, I have one good-sized one, so it may be a blessing after all. Besides, Madam Relief's daughter will surely inherit her mother's good qualities, so why worry!

Yes, honeybees surely keep one guessing, and isn't it noteworthy and prophetic that the N. R. A. should end Relief?

And now what can I name my young queens? Relief's successor is easy. It must be Queen Prosperity. But what will follow in the N. R. A. footsteps? The problem beats me, and only time can decide this momentous question properly.—Spinster Jane.

From North, East, West and South

NORTHERN CALIFORNIA.—We are wondering if every beekeeper of California read the editorial in Gleanings for July, entitled, "The Future of the Bee Culture Laboratory at Stake." If not, why not? Do it now, for it is a timely subject and we should consider it carefully. Beekeeping in the United States has sustained terrific losses in personnel this year.

This is a busy season for beekeepers. If there is a time when they let up on reading, that time comes when there is the greatest activity in the field. Let that be as it may, we all know that much of the progress made in world history has been through the investigative mind, co-operative spirit, and studied advice of experienced observers.

The work of the Pacific Coast States Bee Culture Laboratory has already attracted the favorable attention of our most progressive beekeepers not only in the United States, but in every other country of the world, and that station may suffer. However, ours is not the only one endangered. We lost a good man in Washington in Geo. E. Marvin, who has done such excellent work in the study of honey. His was the kind of work that is sorely needed.

Beekeepers Hopeful for the Future.

Extraction in the alfalfa districts is about over and the result is far from what the beekeepers hoped it would be. In the crowded star thistle district, extraction has commenced. The results there will be better, but not good enough to pay off the shortages of the three past poor years. This will be the last crop for 1934. Then we will look into 1935 with our fondest hopes for a return of the better times before the depression.

It is encouraging to know that the appropriation in many counties for war against disease will be increased. Another good sign is the great improvement in many counties of better organization.—Cary W. Hartman, Oakland, California.

SOUTHERN CALIFORNIA.—Verily our vocation seems conducive to a ripe old age. The recent passing of three leading lights in beekeeping seem to verify this. J. E. Pleasants of Orange, California, 95; J. L. Bixby, Corona, California, 75, and M. A. Gill of Hyrum, Utah, 82, all well past the three score years and ten. The writer was privileged to know personally each of these fine old men for a period of over a quarter of a century and was always inspired and encouraged by their presence.

Will Rogers says, "All I know is what I read in the papers." But the papers can not tell or convey to the average mind, how many grasshoppers or chinch bugs there are on a man's farm, neither can they make one realize how dry a country can get that has had an abundance of irrigation water for years and is suddenly cut off with not enough for stock or domestic purposes.

The writer made a hurried trip to the Imperial Valley July 31 and things are getting into a deplorable condition there. The possibility of summer rains on the upper reaches of the Colorado River is the only hope of partly averting a most disastrous situation. Bees did nicely there during the early season but all honey producing flora is fast drying up with the possible exception of the tamarix trees. These seem to stand the drouth and hot weather better than most other trees and are blooming now.

Over our part of the state the prospects have not improved. Orange trees, for some unknown reason, have been showing an unusual amount of "out-of-season" bloom. While the bees are working on it, it is more because there is nothing else to work on than because of any nectar they might get.

Thousands of colonies were moved to the lima bean fields (blooming now, August 5), and are reported to be getting enough honey so that there are good prospects of honey to winter on for those colonies strong enough to take advantage of the flow.

Thunder showers that in some seasons help out our desert mountain ranges are lacking this year and some beekeepers who moved there have moved out again. Others who moved from orange to alfalfa have moved on to the cotton, never losing hope that they will yet find a honey flow.

Sugar is being furnished beekeepers in lots of ten pounds per colony. This amount it is hoped will carry them until fall when more will be needed unless there should be early rains and an open winter when it might be possible for a colony to pull through until spring.

The honey market remains firm with buyers ready to purchase at or a little above last year's prices. The reports of a short crop seem to warrant beekeepers' confidence in a better price a little later on. Beeswax demand remains good with prices unchanged.

Various plans for feeding have been suggested. Some advise cutting the colony down to a quart or so of bees and these placed on five or six combs. This would obviate the feeding of any surplus bees, also the caring for any surplus room by the bees during a time when no nectar was coming in.

Forest fires have burned over large tracts of bee range which does not add to the future prospects of honey in those sections. Everything possible is being done in the way of fire lanes, lookout men, and government protection to prevent fires, but everything is dry as tinder and the least spark or cigarette easily starts a blaze that grows into a conflagration in a very short time.—L. L. Andrews, Corona, California.

IOWA.—We can't talk about big honey yields this month or this year, so far as the lower half of Iowa is concerned, and from all reports there will be little honey produced anywhere in Iowa.

The southern part is in a pitiful condition owing to drouth. It was dry in Jones County the fore part of the season. Even the dandelions withered in the hot sun. On July 4, the drouth was broken in our immediate locality, and we had two regular downpours, and intermittent rains for a number of days after.

No Oversupply of Iowa Honey This Year.

The bees throughout the state, at least the southern half, are either in very poor condition or have succumbed entirely if they have been left to shift for themselves. A very poor fall flow is in sight, and there will be little if any surplus from that source.

White clover had just come back in these parts and it looks now as if there would be another wait for "a comeback."

If bees go through the winter they will have to be fed. Some beekeepers are discouraged. One told me that he would not feed, and the bees would have to shift for themselves.

I would not know where to buy any 1934 honey. There is little honey of any kind on the market, and what little there is was likely held over. There should be no oversupply of Iowa honey this year.—W. S. Pangburn, Center Junction, Iowa.

INDIANA.—Rains are reported in various parts of Indiana. In this locality, with the exception of three or four very light showers, there has been no rain since about April 1, and it is now August 5.

Some Surplus Honey in Spite of the Drouth.

Notwithstanding the drouth, there has been some surplus honey stored. Basswood yielded well and sweet clover has helped out some, but there was not much of the latter. This has been the first year, so far as I have been able to observe, that bees have gathered an appreciable quantity of honey from alfalfa. Last week I accompanied our state inspector to more than fifty small yards. The surplus varied from nothing to about 75 pounds in well-kept apiaries located near fields of alfalfa. All honey will be consumed locally and prices will rule higher.

In every locality beekeepers should get together and agree on a uniform price that will afford a reasonable profit.—E. S. Miller, Valparaiso, Indiana.

SOUTH DAKOTA.—The old story prevails for this season—this state continues dry. Bees have been fighting against odds since the middle of July trying to make their own living, and it is no less than surprising that they are able to do it. Following good rains in late June the flow was fair the first half of July and powerful colonies stored a full-depth super. Colonies slightly under par did nothing in the way of surplus and, even if conditions should make a miraculous change, there is no prospect that they can do more than make up their winter supply from now on. The best of the pasturage at this time is the big white sweet clover that grows in the road ditches. Farmers have been favor-

ing the yellow blossom and dwarf white to the exclusion of the big white the last few years, but they are beginning to see their mistake. We foresee South Dakota as a great honey state if big white and big rains ever come back.

Some of the persistent comb producers took adversity by the throat and wrung out a nice bunch of sections by building up their colonies in double stories, feeding a little when necessary. When the flow set in they shook them down in one brood chamber and put on comb supers. The bees made good.

With the short crop of honey and the crying need for money among beekeepers (to which need beekeepers are not the only heirs) there will be a great temptation to remove as much honey as possible from the hives and the consequences are likely to be lamentable. Probably the only thing that will save many colonies from winter starvation is a duplication of last year's condition when a moderate flow continued past the middle of September before frost stopped it. According to my notebook there was a good flow on September 17.

How long will a queen live in a cage? Al Folsland of Folsland Bros., at Oldham, tells one. In late September last year they introduced a bunch of southern queens. In checking and removing cages later one colony was passed up, unnoticed. In the spring check-up six months later they discovered the caged queen still alive. She was released on the combs and the hive marked. Subsequent inspection showed the long incarceration had apparently not hurt her. She had a fine brood nest started and was going right ahead.—J. F. Norgren, Junius, South Dakota.

ILLINOIS.—The summer of 1934 will go down in history as one of the driest, and hottest we have ever had. The northern and southern parts of Illinois are extremely dry. The central part for about 50 to 100 miles wide has had quite considerable rain and conditions seem about normal. A few light showers come every week or so but we do not have any good soaking rains.

The early drouth prevented the normal development of colonies. When the sweet clover started to bloom colonies were not up to normal strength, and we will get only a fair crop from the sweet clover.

Last year's crop was cleaned up long ago. The price advanced about one and one-half cents on the last of the crop. If we had a bumper crop the increasing demand would cause the price to stay up. However, with a short crop the price is going to go too high and a number of people and concerns say it will not be practical to use honey.

A Vigilance Committee is Being Appointed.

Reports from the deputy inspectors have been coming in promptly, showing that inspection is being carried on in almost every county. In some cases they have inspected in territories that have never been reached before. We are planning to appoint some of our best beekeepers on a "vigilance committee" for the purpose of locating apiaries that have never been inspected, also to report the careless beekeepers who allow bees to die during the winter and let them stand until the inspector comes in the spring to take care of them. This plan is being tried to reach those who never come to beekeepers' meetings, and those who do not seem interested in inspection.—C. L. Duax, Springfield, Illinois.

OKLAHOMA.—We are now experieneing the worst drouth that we have had for years. Up to date (August 5) we have not had a general rain for about 50 days; also several heat records for the state have been broken. If we receive rain in a few days the bees may be able to gather some nectar and pollen from the late legumes, such as peas, and perhaps some pollen from kaffer corn. We usually get rain around the middle part of August, and if we do get rain at that time everything will be much relieved. Even though it may not aid the bees so very much in the way of gathering honey, it will at least break this terrific period of heat and dryness. We are letting our bees retain the surplus they gathered in the spring as there is no telling what is ahead of us.

There have been comments on bees in general that went something like this, "Well, it doesn't look as if bees are such a paying proposition after all since they did not yield very much surplus this season." After comparing the progress of the bees with other phases of agriculture it seems to me that they did pretty well. Strong colonies that were properly taken care of stored up enough surplus to carry

them through next winter and spring in fair shape (providing we do not have an unusually mean winter and spring) and enough stores to build up strong colonies for next season's honey flow. Most of the crops are so badly stricken that except for the earlier crops, such as oats and wheat, and perhaps some kind of a cotton crop in the fall, there isn't very much to show for all of the labor and capital involved. Much feed will have to be bought for livestock, while very little, if any, expense will have to be put out for the bees. I have yet to be convinced that properly managed colonies of bees are not able to hold their own with other phases of agriculture.—Clarence J. Tontz, Crescent, Oklahoma.

COLORADO.—From the standpoint of honey production, the drouth area has reached well into Colorado, extending across the southern half of the state and to the western slope. The honey crop will probably not exceed 20 per cent of normal from today's appearances. North central Colorado has fared better. A peculiar set of circumstances has contributed to a more generous crop. Yellow sweet clover and first cutting of alfalfa did not yield but rains of a year ago in August started a good crop of white sweet clover on roadsides and ditches. This clover gave good returns in July. Also, the second cutting of alfalfa has been allowed to stand to full bloom, either because it was too short to bother cutting or there was no hope for a third cutting, so that it remained standing to get as much growth as possible. This combination has sent our best colonies to above 150 pounds of surplus honey to extract.

There is a definite trend away from comb-honey production. Beekeepers are gradually turning to extracted honey. More than usual comb supers are being stapled together for extracted combs this season. A few of the specialists plan to remain a while and may profit thereby. It takes a specialist to produce good comb honey, and in almost every case these men are much better beekeepers, have a better understanding of bee behavior and maintain a much better layout of equipment. The reasons given for the change are low prices, perishable product and expense of equipment. The comb-honey men "hate" to quit but are being forced out.

One-eyed bees are no novelty with John W. Holzberlein of Grand Valley, Colo. He has just sent in a sample of over a hundred from one hive. These workers have the one eye mostly on the upper front of the head. In the fusion of the eyes, the ocelli have probably been absorbed, as they have disappeared entirely. There is no sign of the juncture of the eyes. The eye appears as one continuous organ. In one bee of the group observed there was incomplete fusion with the ocelli still evident. Observation of these bees is not complete, but it appears that a whole train of development will be shown from the two normal eyes and three ocelli to one eye without ocelli. It takes a bright pair of human eyes to pick out one-eyed bees unless one is looking for them in particular.

Fear has been expressed by some beekeepers that the wide distribution of grasshopper poison this season might cause death of bees. A small test was made here to indicate the possibilities. Three good normal colonies were set out in a dryland pasture, which was to be poisoned for hoppers. The bees were placed in the center of 150 acres where standard hopper poison of bran, sodium arsenite, beet molasses and amyl-acetate was used. The colonies were located three days before the second poisoning and two days after the first poisoning. A slight honey flow was beginning. Bee pasture was about a mile away. The brood was examined frequently after the poison was applied. No brood damage was evident at any time. Subsequently these three colonies gathered 150 pounds surplus honey per colony. No damage to brood or bees is therefore indicated.—R. G. Richmond, Ft. Collins, Colorado.

MANITOBA.—These are anxious days for the large producers of this province who have their money tied up in bees. The hot dry summer has kept everyone guessing. Sweet clover has stood up better than other vegetation but the present indications are that only a 60 per cent crop will be harvested.

Prices on old honey for the past three months have steadily increased until the large department stores are selling No. 5's at 10 cents a tin more than last fall. The buyers are trying hard to buy for less than they paid last year, while the producers feel that in asking one cent a pound more all around they will have a hard time to meet their obligations and keep going. A few are extracting and

are hard pressed for cash. Whether there will be enough of this class to break the price, the next few weeks will tell. It looks like a good year for those who can hold their stock but it is too bad for those who must sell at once.

We had a fine turn out at our summer meeting at Oakville on July 20. While the program was going on 97 automobiles and 365 visitors were counted. Better than that, we held a directors' meeting at 4 o'clock and 16 of our 17 directors were present. It will be many years before we can beat that record.

Demonstrations in packing bees for winter and in rendering old combs with a wax press were an interesting part of the program.

Figures given at the meeting from the 1934 registration show that there are 84 beekeepers in this province that have 100 or more colonies of bees and there are 3276 beekeepers who have registered in 1934.

We adopted this year a new idea in registration, at least it is new to us. We prepared lists of all the beekeepers at each address, a copy of this list being sent to all the registered beekeepers at that address with an accompanying form to fill in names that were missed last year. We have secured splendid results from this system, although a good bit of work was necessary to check and arrange the lists as they came in.

Some amusing reports came from this plan. There are always some who will not fill in government forms for fear they will be taxed. We put it all over that class by sending follow-up letters which convinced them that unless they reported there was a grave danger of their being fined. We now have what we consider pretty nearly a complete mailing list.—L. T. Floyd, Winnipeg, Manitoba.

TEXAS. — The fifty-seventh annual meeting of the Texas Beekeepers' Association was held at College Station, July 30 and 31. The attendance was not as large as at other meetings in recent years, but was one of the most enthusiastic. The most notable contribution was that of Dr. Don O. Baird of the Sam Houston Teachers' College. His talk on "Educating the Public to be Bee Wise," was copiously illustrated by colored posters designed to call the attention of the public to honey bees.

It was agreed by all present at the meeting that the honey crop of this year would not be over one-fourth of the normal and that the bees had lost in numbers during 1934 one-third of that of 1933, this loss being largely due to beekeepers abandoning their yards because of the low prices and dry weather.

T. W. Burleson led a very enthusiastic discussion relative to the American Honey Producers' League, the American Honey Institute, and the Southern Beekeeping Conference. Everyone says that these three institutions should be maintained and should be taken care of in such a way that results would be of more benefit than have been obtained in the past.

Perhaps the most enjoyable part of the program was a demonstration in the use of honey in the home. This was given by Miss Lola Blair, Specialist from the Extension Service of the A. & M. College. In introducing her talk Miss Blair said that she had not come to talk but to show, and before the audience she prepared a line of delicious sandwiches and drinks in which honey was used.

The annual Beekeepers' Buzz, which is the social affair of the conference, was held at the residence of Dr. and Mrs. F. L. Thomas. The feature was five reels of bee pictures. These reels dealt with the pollination of the plants by bees. The reels were loaned by the United States Department of Agriculture.

The beekeepers elected Mr. Geo. M. Jeffus, Crockett, as President; H. B. Parks, Secretary.—H. B. Parks, San Antonio, Texas.

NORTH CAROLINA.—Reports regarding the honey harvest in North Carolina indicate that the crop will be about 90 per cent normal for the state. In some sections the crop is larger than normal, while in others it is lower, but the general average is very good and most beekeepers are satisfied with a profitable yield. The flow from sourwood was very good in the upper Piedmont and Mountain counties, while in other localities it was from poor to medium. Taking the sourwood region as a whole the yield was rather light. However, beekeepers in favored localities report yields of 60 to 75 pounds per colony. Sourwood honey commands a higher price than any other honey produced in the state and usually sells for about twice as much a pound as the other varieties.

Prospects for a fall flow are very good

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at this time. Plants producing fall flowers are abundant. Frequent rains and warm weather are producing a very heavy growth of vigorous plants and if conditions are favorable during September and October a heavy yield may be expected. In many sections the winter stores will be largely from fall flowers. However, the better beekeepers do not depend on the fall flowers but leave other honey with the colonies.

Bees Kept in Cherokee Indian Reservation Provides Indians with Ready Cash.

It might be interesting to beekeepers who may visit the Smoky Mountain National Park to know that many Indians keep bees in the Cherokee Indian Reservation. The Reservation is partly surrounded by the park and some of the paved roads go through the Reservation. Very few colonies may be seen from the highways as most of the Indians keeping bees live in the coves and on the mountain sides, some of them being several miles from any highway. It was necessary for us to walk two miles over a narrow trail to reach one of the apiaries where more than 90 colonies are kept. This is the largest apiary in the Reservation, although many of the Indians keep twenty to forty colonies. However, the majority keep only a few colonies. Most of the colonies are in eight-frame hives. Some of the Indians depend on the bees for nearly all of their cash income. Mr. A. M. Adams, Federal Farm Agent, Cherokee, N. C., is doing a good work in helping the Indians solve their beekeeping problems as well as in other lines of agriculture.—C. L. Sams, Raleigh, North Carolina.

GEORGIA.—Swamp beekeeping has not been profitable for the last five years, owing to unfavorable weather. The only hope for the beekeeper is to remove all honey down to the brood chamber just as soon as the spring flows are over, and move the bees into the cultivated areas, where there is a summer and fall honey flow from peas, velvet beans, and Mexican clover. The best colonies will store a super of No. 1 honey. The bees are moved back to the swamps as soon as there is a killing frost. If they were left in the swamp during the summer they would greatly diminish in strength because of a lack of pollen and nectar.

Another good feature about moving out from the swamps is that beekeepers have a good chance to requeen and make a little increase. This work is going on now all over the state and beekeepers are delighted with the results.

The Demand for Honey Strengthening

Honey is moving as rapidly as the beekeepers desire, since they are holding back to supply their fall and winter trade, also for better prices. While prices are higher than last year, extracted 6 cents a pound, and chunk 8 cents, yet they are not altogether satisfactory because of the great shortage in the crop.

The local demand for extracted and chunk honey has been on the increase for the last two years. The nearby markets are also open and we are not having to go so far to find an outlet, as formerly. Beekeepers are selling their own honey, with their bee trucks, and a few outsiders in our territory are running regular honey trucks, buying and selling all the time, which naturally creates a market and nearby demand for honey.—J. J. Wilder, Waycross, Georgia.

SOUTHERN INDIANA. — California has no monopoly on "unusual" weather this year, for I believe Indiana can equal any unusual weather anywhere on earth. Early in the spring it was cold, the coldest on record. When time for queen rearing came there were frosts and snows. Later the wind began to blow. June was the driest on record. The dust from the western states hung in the air even after the wind went down and instead of having red or pink sunsets we had dusty sunsets. Then the weather turned hot, the thermometer registering from 100 to 110 for many days in succession. June and July were exceedingly warm months.

Late Rains Have Helped.

However, heavy rains came the last week in July. It is surprising how quickly one forgets a drouth after a heavy rain. Vegetation came on surprisingly well and little damage was done to farm crops. The sweet clover flow was light, due to dry weather. Just as it was closing rains came and revived it so we had a prolonged though light flow. The blue-vine or dry-

weather vine as it is called is not doing so well as we are having an abundance of rain now in August. The drier and hotter the weather the better it is for blue vine. The rains have brought on a splendid crop of smartweed and it looks as if there would be a good flow from that source.

Bees as a rule are in good condition now, although they were slow to build up on account of the backward spring. The demand for honey is not what it used to be, still, when everything is considered, it is holding its own very well.—Jay Smith, Vincennes, Indiana.

VANCOUVER ISLAND. — In normal years the main honey flow on Vancouver Island, which is always later than that on the mainland, would be practically over. But the year has been abnormal from the beginning. We mentioned previously there had been no winter whatever, but an unusually heavy rainfall. Colonies were an "unknown quantity" until examined in early spring when it was found things were "humming." They built up rapidly and were in excellent shape for the early honey flow from maple and alder. This latter has never been listed as a nectar producer. It has been found, however, that in some seasons it is a heavy yielder, and as a matter of fact has shared equally with maple, but the latter has had all the credit. This year the alder blossom, as well as the blossom on willow, has been of an unusual large size, and judging from the constant attention they received from the bees over a long period of fine weather, were evidently the cause of an increased production. Several beekeepers on the southwest end of the island were able to extract some supers of exceptionally fine-flavored honey.

Hopes naturally ran high as fruit bloom yielded abundantly, helped by wonderful weather. But up to date (August 4) these hopes have not been fully realized. Reports from Alberni, 150 miles up the Island, right down to Victoria are the same, "Still hoping."

To keep up the reputation of an abnormal weather year, the rain came down in torrents on August 1, and has continued more or less ever since. If the barometer is to be trusted, there are no signs of an immediate change. Although depressing for tourists and holiday makers, gardeners and beekeepers welcome it as it will put new life into clover and fire weed, and we are hoping may yet fill up the supers which are not yet finished.

As for section comb honey, the season has proved most disappointing, and even when a frame of sections has been placed alternately with a full shallow frame, they neglect the former and fill up the frames only.

At the end of August and not before, it will be time to decide whether the season has been successful or otherwise on Vancouver Island, and even if quantity is so far disappointing the quality is well up to the standard.—F. A. Greenwood, Victoria, B. C.

MONTANA.—Following the warmest winter we have had in twenty years west of the Continental Divide in Montana, bees were bringing in dandelion honey on April 14. Ten days later the orchards were in full bloom and strong colonies were storing four pounds a day.

This early spring honey was fine for package bees, weak or divided colonies, but May was a cold month and very little surplus honey was extracted, the bees needing most of it until the main honey flow.

Some honey was coming in from the sweet clover and the alfalfa by June 10. With plenty of snow high in the mountains for irrigation, the beekeepers were anticipating a good year, but with a north breeze nearly every day and temperature a little below normal, we are not going to have a big honey crop to brag about this season.

I hear of some honey being sold at 8 cents per pound in pails.

At this date, August 6, the second crop of alfalfa is in bloom and if we can get ten days of warm weather, I believe that most of the beekeepers here can pay their taxes, live, and finance their usual big game hunt this fall.—David Pile, Corvallis, Montana.

ALABAMA.—Sweet clover was more abundant and secreted more nectar in Alabama this season than it has for several years. Beekeepers who did not sell packages produced a crop of honey. The weather in the early spring was so unfavorable that bees built up very slowly. Package shippers booked so many orders before the shipping season that they were forced to rob their colonies very closely to ship orders on schedule. Bees in the

clover belt have built up into fine colonies and have enough honey for winter stores. Many colonies in other sections where the heaviest honey flow is in the spring will have to be fed to carry them through the winter.

There is a nice crop of young sweet clover to bloom in 1935 if nothing happens to it. The green worm that destroyed much of the clover here during the past ten years was not as active during the dry years of 1932-'33 as it had been. This is the reason the clover has increased. If we should have a wet fall this year we will probably have the same trouble again.

The Demand for Honey Is Good.

Honey is selling some better than it did a year ago, but prices have not increased. The local crop will soon be consumed and prices will no doubt strengthen as honey is shipped in from a distance.

The demand for queens during June and July has been poor. There are no doubt several reasons for this; the drouth in the West where many queens have been sold in the past, the higher price under the code, and the fact that during the depression many beekeepers rear their own queens and are not yet sure that they can buy them better and cheaper than they can rear them at home. Few queen breeders have made a profit since the close of the package season. If this condition continues many queen breeders will double up their queen yards late in May and go North to produce a crop of honey rather than produce queens that they can not sell.—J. M. Cutts, Montgomery, Ala.

ONTARIO.—According to the old saying that "a swarm in July is not worth a fly," the value of an August swarm would be hard to compute. Today, August 10, three huge swarms issued at one yard while the boys were there getting a load of honey. A large acreage of buckwheat in full bloom, with very strong colonies that had to be shut down to one super for a few days by escapes so as to get the white honey off, has accounted for this condition. Supersedure of queens may be a factor in causing the swarming, as in two cases today when an old clipped queen and a virgin came out with the swarm. We had practically no swarming during the white honey flow and if a swarm or so leaves each apiary we are not going to worry much.

With the largest acreage of buckwheat we have ever had in our locality, all we need is a shower or two and warm weather to bring on a good flow of honey. While we have had about six inches of rain locally since mid-June, the country is quite dry. From reports received I judge we have been blessed with rains as compared with many sections of the province, particularly the south and western parts.

What I know about predicting honey crops can be written on one side of a postcard in large type. What I do not know would fill volumes. Contrary to my former predictions, Ontario has more honey than a year ago. Of course, that does not mean a bumper crop as last season's yield was below the average. In northeastern Ontario alsike and white Dutch clover was very plentiful and the crop there is heavy, one of the very best ever obtained.

Our own crop is fair and if bees had been in normal condition with no winter loss to be made up, the crop would have been good. While we have very little forest left and few basswood trees, almost all our honey is flavored with basswood.

Clover Looks Good Locally for Next Year.

Honey prices in general are higher and the demand good. In the past three weeks over 4000 pounds has been sold at our door, and we have made little effort to sell it as we have been too busy getting white honey off the hives. The scarcity of fruit has helped to increase the demand for honey. Many families are now buying honey in 100-pound lots.

On August 8, we met several beekeepers from the western part of the province. All reported fair to good crops but very poor prospects for clover in 1935. Locally, clover looks good for next year, quite in contrast to a year ago when drouth had killed all clover around us.

At the Guelph meeting, it was decided to again ship a large portion of our crop to Great Britain. Even if the local demand takes more honey than usual, it would be a mistake to neglect the export market that was so well established last year. —J. L. Byer, Markham, Ontario.

Do Bees Have a Sense of Humor?

The other day an amateur beekeeper blew into our yard and said, "I understand you know everything about bees. Is that true?"

"You said it. What can I do for you?" I replied.

"Well, sir, I have made up my mind that bees have a sense of humor and enjoy a good joke as well as we do. What do you think of that?"

"It is not generally believed that bees have any sense of humor but are merely reflex machines acting according to instinct only, and do not experience such sensations as joy, fear, sorrow or humor," I replied.

"Well," said he, "you are all wet about that for while I know what the generally accepted theory is concerning this matter, my observations convince me that bees do possess a keen sense of humor."

"All right, then, elucidate," said I.

"Well, then, if bees have no sense of humor, why is it they will silently crawl up your trowser leg and lay in wait for the opportune time when you bend over that they may pop it to you in order to see how quickly you straighten up? They do that as a regular rule and I can almost hear them chuckle."

"Pure accident," I replied.

"No accident about it for they make that a regular rule. I knew a New York inspector who inspected some bees belonging to two ladies. After a good chicken dinner they asked him to show them the queen, saying the bees were so cross they could not look into the hives without getting stung. The inspector explained to them that if a little smoke were used the bees could be handled with no danger from stings. 'You will have to show us,' said one. There were three hives in a group. The inspector opened the first hive and immediately found the queen. The second hive was opened and the queen found on the second frame. The ladies thought he must have cast a spell upon the bees as they were so quiet. The inspector said, 'Really, there is no reason for your getting stung with such gentle Italian bees as you have. Just give them a smell of smoke and you can handle them like kittens.' He stooped over to put the cover on the hive. A bee had been planning for just this very opportunity. When he stooped over the bee let him have it. Well, sir, that inspector dropped that hive cover and hurdled all three of those hives at a single leap. I do not know whether the bees laughed over this or not, but the ladies sure did, much to the humiliation of the inspector.

"Another joke the bees have played on me many a time has to do with queen rearing. I have looked into a hive to which I had given a ripe queen cell and have been surprised that the cell was unhatched. On a later examination I found the cell just as when it was put in. The next inspection found a fine virgin and still the cell was there. When I tore it open a worker bee backed out and you could actually hear that bee give me the horse laugh. Now then, if bees do not enjoy a joke tell me why they sometimes allow a virgin to emerge and then take pains to seal the cap down again and sometimes play a joke on a worker bee by sealing it in the cell?"

"He dropped the hive cover and hurdled the three hives in a single leap."

"Give it up," I replied.

"Let us take another case. My sister is very susceptible to bee poison. One sting will lay her up for days so we consider a sting very dangerous to her. One day I had taken off a super of comb honey. She was examining it when a bee flew up the sleeve of her dress. We were in a panic. She gripped the sleeve and held the bee

(Continued on page 573.)

Heads of Grain from Different Fields

Noted Feature Writers Boost Honey

Two noted feature writers have recently given honey sufficient mention in their writings to call the attention of the public to it in a most forcible manner. Bengamin Gayelord Hauser, Viennese food and diet expert, writing for the Boston Daily Record, often gives honey a prominent place in his summer diet menus. Furthermore, in the discussion of the relative value of foods he has called his readers' attention to the natural health value of nature's own sweet. Hauser not only gives dietetic advice through his daily column for the Record, but gives instructive educational reasons for his choice of foods. Princess Alexandra Kropotkin, a descendant of the first czar of Russia and friend of the famous in Europe, but better known for her weekly page in Liberty Magazine, "To the Ladies," which even men read, recently gave honey as one of the principle ingredients for a famous Chinese method of preparing pork tenderloin. As the circulation of Liberty runs somewhere around the two million mark per week and as this method of preparing tenderloin will appeal to a very high class of readers, it is obvious that beekeepers can not help but greatly benefit. Not that the consumption of honey will jump by trainloads overnight but that such suggestions, reaching millions of homemakers, can not help but have an appreciable beneficial effect as time goes on. More effective than paid advertising and reaching millions that the limited advertising funds of individual sellers of honey could not hope to reach, these mentions of honey by famous feature writers certainly warrant the thanks of beekeepers everywhere. At the least, when it is possible to put in a kind word for these writers, do so. They have helped us and a helping hand in return will be appreciated.—Robert M. Mead, White River Junction, Vermont.

Simple Equipment for Marking Queens

It is convenient to have the queens marked with some bright color such as cardinal red or orange duco, so that they may be readily found on the comb when requeening, thus saving a lot of time. Different colors may be used each year so one may tell very easily when the queen was introduced. Orange might be used for one, red for another and yellow for the next year to keep an accurate record. In the picture is shown handy home-made equipment which makes the work of marking easily accomplished. The holder is cut from a piece of tin with points at the bottom. These points are bent back about

Touch the thorax lightly.

one fourth of an inch over a rubber band. The holder is placed on the queen to be marked so that the rubber band crosses the queen just back of the thorax. With the marker in hand quickly apply a speck of duco by touching lightly on the thorax of the queen. The marker is made by whittling a piece of wood to fit the mouth of an ink bottle and tapering to a fine point that reaches very nearly to the bottom of the bottle. The duco keeps nicely in the ink bottle tightly corked with the marker.—Benj. Nielsen, Aurora, Nebraska.

The Prince of Wales and Beekeeping in England

At the Kent Fair, held at Maidstone on June 27, the Prince of Wales learned a lot about beekeeping in England when he halted at the stand of the Kent Beekeepers' Association. But he refused to be stung. An expert in a tent of netting with an open roof showed him a hive of working bees, and let hundreds of them settle on his hand. "Are they stinging you?" asked the Prince. "No, sir," replied the expert. "They would if I tried it," said the Prince with a broad smile, but the expert assured His Royal Highness that the bees would not sting if he kept his hand still. "Well, I don't think I'll risk it," remarked the Prince. The expert tried to find the queen to show the Prince, but she was elusive. As he was carrying a comb with hundreds of bees on it the

Prince called out, "Be careful. If you drop it, some of them may settle on us, and then we shall get stung." Afterwards the Prince had a long talk with the expert about the possibilities of increasing beekeeping in England.—From July, 1934, Scottish Beekeeper.

Poor Ventilation May Cause Swarming

Because an apiary is a bad place for a mowing machine on a hot day many beemen leave weeds growing around their hives, not realizing the harm the weeds do. Tall weeds left around the hives cause poor ventilation. Poor ventilation, with hot weather, may cause swarming. When hives of bees are placed among thick overhanging trees the bees have difficulty getting through the branches of the trees with heavy loads of nectar and pollen. This causes their wings to wear out. —Earl Knebel, Dunkerton, Iowa.

Oil of Anise Didn't Harm Bees

One of the present fantastic ideas in many localities is that colonies of bees and sometimes whole apiaries are destroyed by the bringing home of anise oil that has been used by bee hunters for attracting bees. It is charged by these beekeepers that the anise oil is put in the honey used for bait and when this honey is brought home by the bees the honey is soured and the colonies die. In my work as deputy apiary inspector many an irate beekeeper has ridiculed the idea that any such disease as foulbrood exists, and blames the whole matter on bee hunters and anise oil. Without some definite experimentation the contention that some loss was not caused by anise oil was difficult. So far as I know there was no available data on this subject. I forthwith decided to determine just how deadly anise oil was, and in the fall just before I packed my bees I fed two colonies about two quarts each of sugar syrup to which about one teaspoonful of anise oil had been added. I reasoned that surely no bee hunter would be more lavish with his bait than this. I watched these colonies anxiously but noticed no unusual mortality and they wintered as good as any in the yard. It seems to me that the best thing to do when a question arises is to follow the advice of Dr. C. C. Miller and "ask the bees."—Raymond Bentley, Townville, Pa.

A Back Porch Apiary

In the heart of the city of Newark is an apiary located on the back porch of the second story of the K. of C. clubhouse. I have kept bees in the city for more than twenty-five years and never had a complaint from any one. Mr. Root no doubt remembers that I keep bees down town, for when he lectured at the Kiwanis Club about ten years ago I furnished the bees for that occasion.—Jerry Lowendick, Newark, Ohio.

Jerry Lowendick's back-porch apiary in the heart of Newark, Ohio.

Talks to Beginners

M. J. DEYELL

Beginners in beekeeping have doubtless had varied experiences thus far this season. In some sections of the country the season has been disappointing, while in other sections good crops of honey have been secured. In some of the drouth areas, beekeepers have experienced total failures. It is little wonder that some beekeepers are discouraged. Beekeepers are optimists. Poor seasons are soon forgotten, provided, of course, they are followed by good seasons.

Beginners experience some thrills, especially during a good honey flow. There is much to learn about nectar secretion. Frequently some honey plants that do not secrete nectar every year will suddenly begin yielding nectar. It pays always to have colonies and supers in readiness for a honey flow. The beekeeper who has his bees ready for the honey flow when conditions are favorable will secure some surplus, and the beekeeper who isn't ready will secure little if any surplus.

Conditions Vary in Different Regions

As a rule, bees do not require much attention during September. In some regions where sweet clover and alfalfa constitute the major sources of nectar, the honey flow tapers off in early September and it is unnecessary to add more supers. In other regions where buckwheat and goldenrod are plentiful, some surplus honey is stored during this month. In the Mississippi Valley heartsease (sometimes called smartweed) yields well in September. In regions where aster is abundant considerable surplus honey is secured, when weather conditions are right. In the northern United States and Canada brood rearing is practically suspended by the end of this month, or early October. In the southern states it is continued several weeks longer.

A Change in Colony Activity

As soon as the cool nights come queens slacken in their egg laying and the brood nests are reduced somewhat. The bees, instead of storing honey in the supers, are inclined to store it in the brood chambers.

The beginner may notice a difference in the size of colonies in September as compared with their size earlier in the season during June, July and August. Many of the old bees that help to store surplus honey during the summer months die off early in the fall. As mentioned in a previous Talk, September is an important month for brood rearing. The young bees produced during late August, September, and early October are the bees that survive the winter.

Management During September

A beginner should know the exact condition of all colonies. A thorough examination should be given colonies during the month before cold weather comes. This is a good time to correct any defects found in colonies. There are at least four things that the beginner should check up at this time, namely, the queen, the size of the colony, the amount of honey in the hive, and the amount of comb space available for brood rearing.

While requeening is usually done earlier in the season, preferably during August, September is not too late for requeening. As a rule, a queen is more easily introduced late in the season than she is early in the season. If, therefore, an inferior queen is found she should be replaced with a young prolific queen of good stock. Sometimes a queen that has done good work early in the season may fail during the fall months. She may be superseded and a young laying queen may be found during September. Usually queens reared under the supersedure impulse are of good quality.

Beginners who have been reading these Talks are aware of the emphasis placed on ample stores for each colony at all times of the year. In some regions, due to unfavorable weather conditions, there may be a scarcity of honey in the hives at present. By rights, there should never be less than 15 pounds of honey in each colony at any time during the year. When there is less than this amount combs of honey should be given, or sugar syrup should be fed. An easy way to make and feed sugar syrup is to mix two parts of granulated sugar with one part of water, either by weight or by measure and stir until all of the granules are thoroughly dissolved. Place the syrup in a 10-pound friction-top pail, the cover of the pail being perforated with about two dozen holes made by a small nail. The pail of syrup should be inverted over the hole in the inner cover, and the pail covered with an empty super, the hive cover resting on

top of the empty super. This puts the feed exactly where it is needed.

It is a little difficult for a beginner to know how large a colony should be during this month. A colony that has brood in five or six combs during early September is likely to be strong enough in bees to survive the winter provided other conditions for successful wintering are present.

Uniting Weak Colonies

Some beginners are inclined to increase the size of their apiaries too rapidly. They do not recognize the difference between a hive containing some bees and a hive containing a real colony of bees. It is safe to say that a colony having brood in only two or three combs is not strong enough to winter successfully. In some instances, under-strength colonies are wintered in bee cellars. Some weak colonies may be wintered successfully out of doors by giving special attention to packing. But even though they are wintered successfully, they are a liability in the spring, because they may not build up normally without being strengthened with package bees. On the other hand, populous colonies build up rapidly and require little if any attention in the spring.

Weak colonies should be united in the fall. The uniting can be done by the newspaper plan—that is, by removing the cover of the stronger colony, placing a newspaper over the tops of the frames, first punching a few small holes through the paper with a pencil, then placing the hive of the weaker colony without the bottom-board directly on top of the newspaper. The bees will gnaw away the paper and unite readily. If the queens are equally good the job of killing one queen may be left to the bees. If, however, one of the queens is old or otherwise undesirable, she should be killed before the two colonies are united.

Laying Worker Colonies

Sometimes a laying worker colony is found during September. This condition is brought about by a colony becoming hopelessly queenless. Under such conditions a few of the worker bees in the colony will start laying eggs. The eggs being unfertile will, of course, develop into drones. Such colonies dwindle in strength very quickly. As a rule, it does not pay to try to requeen a laying worker colony. It is preferable to unite it with a queenright colony. The uniting can be accomplished in the manner just described, placing the laying worker colony on top.

Comb Space for Fall Honey

Going back to the fourth requirement to be observed when giving colonies a thorough examination this month—that of furnishing sufficient comb space for brood rearing and incoming nectar, this is quite important in regions where there is a heavy honey flow. Any beginner who fails to provide supers during a good fall honey flow will lose surplus honey and curtail brood rearing. The bees will crowd the honey in around the brood nest. As fast as the young bees emerge the bees will fill the empty cells with incoming nectar, and consequently, the queen has very little comb space for egg-laying.

Removing Surplus Honey

In regions where surplus fall honey has been stored, it should be removed from the hives as soon as the honey flow is over. Honey in extracting combs should be extracted as soon as it is taken off the hives, before cool weather comes. In some instances, it is necessary to heat the room in which the extracting is done in order to get all of the honey out of the combs. As a rule, extracted honey is easier to produce than comb honey in the fall. Bees store honey in extracting combs more readily than they will store it in comb honey sections during cool weather.

Selling Honey During the Fall

September is one of the best months for selling honey locally. Tourists will buy honey at roadside stands. It seems that people buy honey more readily after the weather has turned cool. They think of honey in connection with hot cakes and biscuits. Beginners will find selling honey very interesting work. It affords an opportunity to develop salesmanship.

Watch for Disease

It is hoped that beginners reading these pages are not troubled with American foulbrood. However, it pays to be constantly on the watch for it. During the last examination of the bees this month, each comb should be examined closely. It is especially important that no colony be allowed to go into winter quarters with even a slight trace of this disease. American foulbrood can be detected easily, even by the beginner, simply by examining the sealed brood. If disease is present, an occasional cell may be found with a sunken perforated capping. When such a cell is found, the capping should be torn away

(Continued on page 573.)

FROM FOREIGN LANDS

W. J. Nolan

The first bee book in English antedated the importation of the honeybee into this country by about half a century. It appeared in 1593 and was written by Edmund Southerne who used as the title, "Treatise Concerning the Right Use and Ordering of Bees." J. W. Moir, Librarian of the Scottish Beekeepers' Association, has prepared some typewritten copies for distribution, according to the Scottish Beekeeper for June.

The well-known English beekeeper, L. Illingworth, objects to the British import duty on queen bees. In the British Bee Journal, he asks the origin of this tax and states that it is too small to stop importation or even to serve as a preferential tariff to assist the home producer. He adds it can only cause delay and irritation and hardly covers the cost of collecting.

Dr. L. Armbruster, who has made the Institut für Bienenkunde at Dahlem, a suburb of Berlin, known throughout the world to those who follow beekeeping literature, has been retired as director. His successor is Dr. W. Ulrich. In addition to his many activities in connection with the Institut, Doctor Armbruster, as Editor of the Archiv für Bienenkunde, has set a high standard for beekeeping periodicals.

Annual reports of beekeepers' associations in other countries give much information as to their problems. Thus the report of the last annual conference of the Commercial Apiarists' Association of New South Wales, given in the Australasian Beekeeper for June 15, shows the existence of many problems similar to those in the United States. For instance, the question of procuring sugar for starving bees, a question of concern in California this summer, was discussed. Railroad freight rates and the question of spraying were other topics on the program. A bounty on exported honey was asked. However, Australian beekeeping differs from American beekeeping in one essential feature and that is in the emphasis placed on trees, the major source of Australian honey. One beekeeper stated that in many cases honey is a more valuable product from trees than is the lumber.

That bees have a sense of time was shown in experiments by Dr. Ingrid Beling (cf. Gleanings, 1929, pages 710-712) who found by training them to come to a feeder at a certain hour each day that, on the first day the feeder was left empty, their maximum number of visits to it occurred 24 hours after the regular feeding hour. However, she did not discover the cause. In a recent issue of the Zeitschrift für Vergleichende Physiologie, Hans Kalmus reports his attempt to work this out. He started with the hypothesis that the time periodicity in the honeybee must be because of a periodicity in metabolic processes and that, if this is so, any abnormal condition which retards or speeds up these processes will disturb the 24-hour rhythm correspondingly. The abnormal conditions used were extreme temperatures, the action of certain chemicals, anesthesia, and confinement. A retardation in the time of their visits to the feeder used in the experiment was actually observed in the case of bees subjected to certain of these conditions which slow up metabolic processes. From his various experiments Kalmus concludes that the time reaction of bees does rest on internal factors.

One of the epics in modern scientific beekeeping was the discovery that a parasitic mite is the cause of the Isle of Wight disease. Hundreds of colonies were reported lost in the British Isles before this discovery, one of the first outstanding pieces of post-war apicultural research, was made public. This work was made possible through the generosity of Mr. A. H. E. Wood, who gave £500 per year for three years to Aberdeen University on condition that the government advance an equal sum. The investigation to ascertain the cause of the disease was carried on by Doctor Rennie with Miss Elsie J. Harvey and P. Bruce White as assistants. In 1920 came the announcement that a mite is the causative organism. This mite was first named *Tarsonemus woodi* on the assumption that it was only a new variety. Later the name was changed to *Acarapis woodi*, when the insect in question was found to represent a new genus. The name, "*woodi*," pays tribute to the man who sponsored the investigation. The announcement of his death at the age of 64 was made a few weeks ago in the Scottish Beekeeper for June.

Gleaned by Asking
BY THE EDITORS

Bee Moth Larvae

Question.—How long does it take the larvae of the moth worm to develop from the egg to the stage when it tunnels into the comb?—James A. Butcher, Indiana.

Answer.—The egg stage of the first brood averages twelve days and of the second brood only ten days. The larva when first hatched out is white in color and very small, only one-eighth of an inch in length. After emerging from the cell it is quiet for a short time while it is apparently drying and stretching in preparation for its work of destruction. Soon it becomes very active but only upon close examination can it be seen hurrying over the combs in its attempt to gain an entrance before being detected by the bees. The length of the larval period for the first brood is forty-five days and the second brood about thirty-five days. It is during the larval stage that a great amount of damage is done to combs.

Royal Jelly

Question.—I am much interested in bees and I want to know about the royal jelly the bees gather and feed to a worker larva to make it become a queen. Will you please tell me what the chemical analysis of this royal jelly is? And from what do they gather this substance?—Mrs. Basil S. Armour, California.

Answer.—Royal jelly is a secretion from certain glands in the nurse bees. The nurse bees eat honey and pollen and secrete the royal jelly, sometimes called bee milk. Herr von Planta, a German investigator, made analyses of the royal jelly and the larval food fed to workers and drones. He found that the queen larva received the richest food, the chemical composition being as follows: Protein, 45.15 parts; fat, 13.55 parts, and sugar, 20.39 parts. Aeppler, an American investigator, has gone farther into detail in the chemical analysis of larval food, an article by him having been published in Gleanings in Bee Culture for March, 1922. If you have access to the back volumes of this journal you may be interested in reading Mr. Aeppler's article.

Making Increase in the Apiary

Question.—I would like to increase my five hives of bees. Could I make about three or four colonies out of each hive by getting queens and introducing them to the divisions?—J. E. Erisman, Ohio.

Answer.—The advisability of dividing colonies depends on the nature of the season as it pertains to nectar secretion, also the time of the year. The best time to divide colonies is at the beginning of a good honey flow. It should be remembered, however, that it is rarely possible to divide colonies and at the same time secure surplus honey. As you have plenty of good, drawn combs and combs of honey you should be able to divide your strong colonies, making two divisions from each of your colonies. When you do this you should select at least four or five combs of brood, preferably sealed brood with young, emerging bees, and adhering bees and place these combs on a new stand. It is well to give two or three combs of honey to each division that is placed on the new stand, because the old bees will naturally fly back to the parent hive, thus depleting these divisions set aside of bees of the honey-gathering age. You can introduce a young laying queen to the division placed on the new stand, or you can move the old queen with the division placed on the new stand and requeen the division or nucleus left on the parent stand. Either plan works out to good advantage. In any event, most of the oldest brood and plenty of honey should be placed on the new stand, as the old bees will remain on the parent stand. When such a division is made during the clover honey flow, both divisions are likely to build up to normal colonies for winter. If the dividing is done too late in the season neither of the divisions are likely to be strong enough to winter successfully.

More Than One Queen in a Colony

Question.—Has the experiment been tried along the line of using two or three laying queens simultaneously in one colony, by the proper use of queen excluders placed in the hive?—George S. Coffin, New Hampshire.

Answer.—A plurality of queens in the brood chamber of the hive is one of the will-o'-the-wisps that has tantalized beekeepers for many years. No one who has tried it has made a real success of it for the reason that you can not change the nature of a colony of bees. It is true that two queens, divided by a tight fitting division board or queen excluder zinc, have been made to work in a colony for a time during a good honey flow. However, at the close of the honey flow either one of the two queens turns up missing.

Weight of Extracting Frames of Honey

Question.—About what is the average weight of a full standard extracting comb of honey, a shallow extracting comb of honey and a half-depth comb of honey?—C. E. Brassington, Ohio.

Answer.—The average weight of combs

of honey depends to a large extent on the number of combs in each super. For instance, when nine combs, instead of ten, are placed in a ten-frame extracting super it is easy to understand that each comb would contain more honey than if ten combs were placed in a ten-frame super. Ordinarily producers of extracted honey place nine extracting combs in each ten-frame super to facilitate uncapping the combs. Under these conditions a well-filled extracting comb will contain about six pounds of honey. A shallow extracting comb will contain about three and three-quarters or four pounds of honey and a half-depth comb will contain almost three pounds of honey.

Variations in the Markings of Italian Bees

Question.—Perhaps you can enlighten me on a perplexing point regarding the color variations of Italian bees, especially as to the difference between three-bands and leather-colored. I have or have had bees of several shades. I have some showing four or five bands of light yellow, in fact, having the whole abdomen yellow except the tip. No doubt these are properly goldens. All the others show at least three bands indicating pure Italian stock but in some the bands seem deeper brown or less noticeable, giving the effect of a much darker bee. Just how are these variations correctly described?—R. N. Woolford, Washington.

Answer.—There is considerable variation in the color markings of Italian bees. The first Italians that came to this country came from northern Italy. These bees have from two to three bands. Some of the darker Italians show only two bands where the lighter colors of the imported stock show three bands. The yellow is dark, almost brown. Bees that came originally from southern Italy are lighter in color. From these original importations of two and one-half and three banded bees came all the varieties in the United States, influenced, of course, by importations of bees from the Island of Cyprus and from the Holy Land. Cyprian, Syrian and Holy Land bees are rather much lighter in color and as a general rule, are much more nervous. The original Italians from northern Italy are usually very quiet, hardy and good workers, but it is generally believed that they are not quite equal to the American bred bees that have been developed for honey gathering qualities. This is probably so in many cases. About twenty-five years ago there was a rage for five-banded Italian bees, but it was seldom that all of the bees in a colony under that name had five yellow bands. There would be a variation of three bright yellow bands, four yellow bands and in some cases, five bands. A few of the bees would be yellow all the way to the tips. They were very beautiful and some of them fair workers, but most of these bright colored bees were inferior to the leather-colored or two and one-half yellow banded bees. Very little is heard today about the golden, five-banded bees. Beekeepers began to discover that the original leather-colored Italians, the darker strains, were better workers generally and more like the original type that come from northern Italy. It is probably true that in many and most cases, the goldens derived their color from the Cyprian or Holy Land stock. Doubtless there were some instances where the bright color was developed wholly from pure Italians. Commercial beekeepers, as a rule, prefer the leather-colored Italian stock. The attempt to breed for extra yellow almost invariably leads to a crosser bee with less energy for field work. When a queen breeder sets his mind upon raising golden Italians, he must necessarily have to lose sight of all other qualities in order to reach his goal of bright yellow to the tips. It is for this reason that the five-banded bees have all but disappeared from the market.

How to Prevent Extracted Honey from Granulating

Question.—Please give me the best method of preventing the crystallization or granulation of extracted honey.—J. W. Romberger, Missouri.

Answer.—The method used by honey packers to prevent or delay granulation is that of heating the honey to about 160 degrees, then cooling it quickly to prevent discoloration. Honey that is sold in bulk can be liquefied as the market takes it by heating it to only about 140 degrees. If heated to 160° then put into large containers, it will be slightly discolored.

Raw Sugar for Feeding Bees

Question.—Do you know of any objections to feeding bees raw sugar instead of the white granulated sugar which is always specified?—R. N. Murchison, California.

Answer.—In your locality (southern California) raw sugar may safely be fed to the bees for winter stores, but in the North where the bees are confined to their hives for long periods without cleansing flights, either raw sugar or ordinary brown sugar would be objectionable. Such sugar contains too much dextrin, which, during long confinement, accumulates in the intestines of the bees, causing them to become restless. This causes them to consume larger and larger amounts, which in turn increases their restlessness and causes them to wear themselves out prematurely.

Just News

Editors

F. W. Krouse of Guelph, Ontario, one of the largest commercial honey producers of the province, died August 10.

William Marshall of DeKalb, Illinois, a well known beekeeper and a Gleanings reader for many years, died on July 27, at the age of 73.

Like cattle rustlers of old, "bee rustlers," driving off colonies of valuable honeybees, constitute a new crime problem for California apiarists. Harold M. Krebs, supervisor of state apiary inspection, reports that a state drive against bee thefts has already resulted in the conviction of one offender.

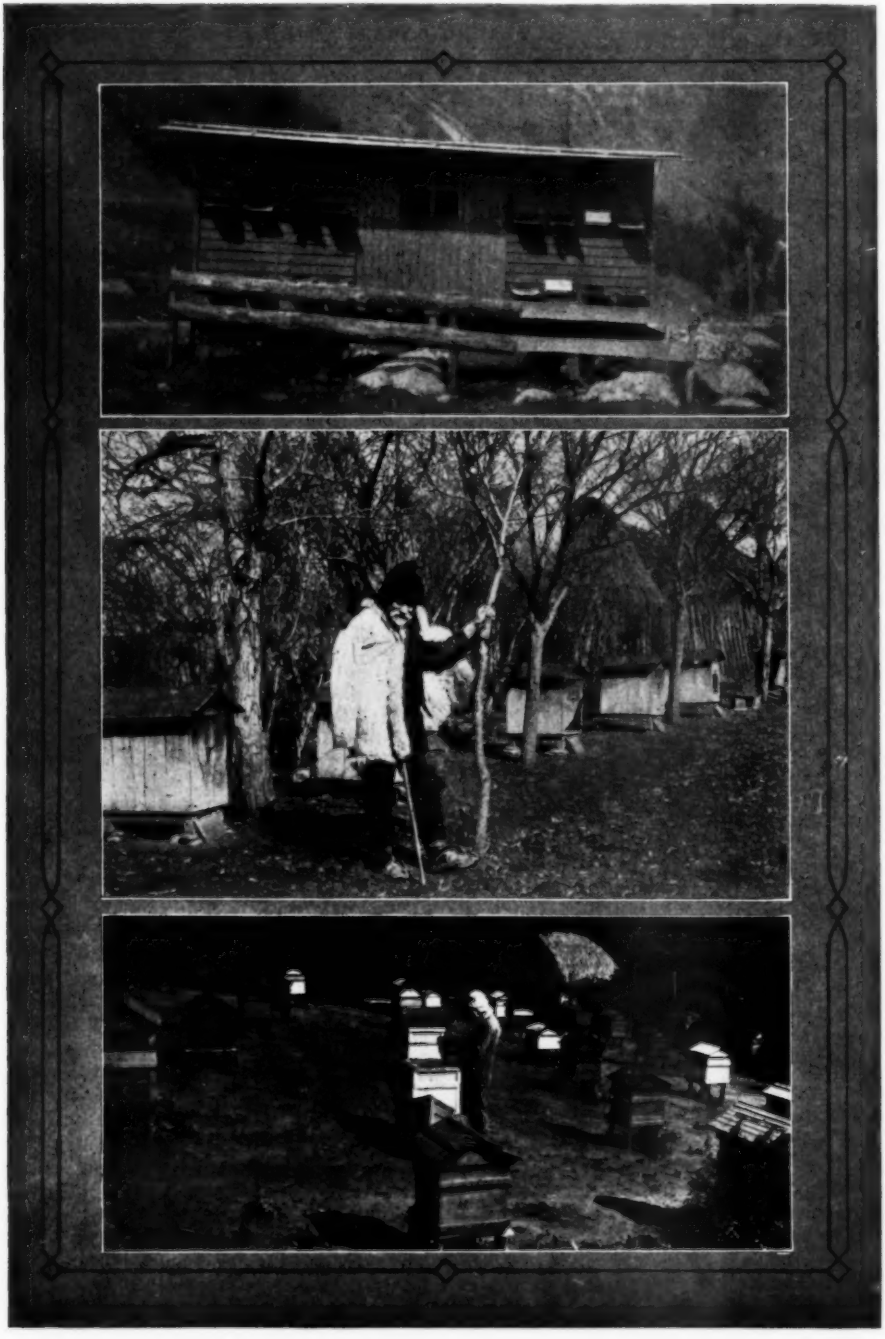
The following regulation appeared in the July 27 issue of The Postal Bulletin: "Queen Bees Admissible in Air Mail Service—Queens bees are mailable for transmission in the domestic air mail service. The article appearing in the current issue of the Postal Guide, reading 'any mailable matter except that liable to damage by freezing * * * can be sent by air mail,' is not intended to exclude queen bees from air mail."

It is with considerable pleasure that an announcement can be made that the American Honey Producers' League will hold its annual meeting jointly with the American Honey Institute and Southern States Conference in Valdosta, Georgia, December 17-19. Preparations are already being made toward assuring adequate accommodations and entertainment for a large attendance. It is hoped that superior access by good roads from all points and the balmy spring-like weather will induce full attendance from beekeepers and those interested in beekeeping.

An interesting meeting of the New Jersey Beekeepers' Association was held in the apiary of Mr. Aug. Thommen, Oakland, on August 8. Mr. Geo. S. Oettle, past president, made an appeal for funds in support of the American Honey Institute. While he was speaking one person handed the secretary a dollar for the fund and by the time he had finished three others had done the same. The final result was fifteen one-dollar contributions and one dollar in small change anonymously contributed, in a receptacle placed for the purpose. Such a response in a state where honey production is conducted on a comparatively small scale should inspire the large producing states to do equally well.

Every beekeeper should be familiar with House Bill No. 295, which is "To prevent fraud and deception in the branding of fresh fruits, vegetables or honey, grown, packed or offered for sale in containers within the state of Ohio and to provide penalties for the violation of the provisions of this act." Extracted honey producers are not affected by this act as it does not apply to extracted honey when processed or blended. Before offering comb honey for sale, it must be marked plainly with its U. S. grade, and the state in which the product was produced, as well as the name and address of the producer or packer. If one has a local trade and does not care to grade his product carefully, he may designate the grade as "Grower's Grade." Anyone who desires a copy of this act may obtain one by sending his request to the Agricultural College Extension Service of the Ohio State University, Columbus, Ohio.

Nine Austrian queens arrived at the University of Wisconsin recently after a 7000-mile journey from Vienna. In spite of their royalty, the queens' trip was halted in Washington, D. C., where they were forced to undergo the indignity of quarantine and physical examinations—and were they buzzing about that! These queens, you see, are bees, and the authorities at Washington wanted to make sure that they were free from the Isle of Wight disease, which is frequently contracted by bees in Europe, before sending them on to the Department of Economic Entomology at the University of Wisconsin. However, they were given a clean bill of health and arrived at the University by mail in small cages which contained candy on which the queens had been feeding since their departure from Vienna. This candy, it was explained by Prof. E. C. Alfonsus, is a combination of sugar syrup and powdered sugar, and is exactly suited to a queen bee's taste. Prof. Alfonsus and his associates imported the Austrian bees to experiment with them and discover whether they can withstand the rigors of Wisconsin winters any better than the Italian bees which are predominant in the state now.—University of Wisconsin Press Bulletin, Madison, Wis.



Top—Portable apiary house used in Switzerland. Middle—The old peasant, Mr. Nencie, in his apiary at Boljevac, eastern Serbia, Jugoslavia. Bottom—Beekeeping in the Soviet Union. A bee-rearing farm of the kolkhoz.

Sell and Buy Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate—7 cents per counted word each insertion. Copy should be in the 15th of month preceding.

HONEY FOR SALE

The reliability of honey sellers is not guaranteed, although strict references are required.

FOR SALE—Clover extracted. F. W. Lesser, Fayetteville, N. Y.

CHOICE white clover honey in 60-lb. cans. J. F. Moore, Tiffin, Ohio.

EXTRA fine clover extracted honey. Ready now. Ross B. Scott, La Grange, Ind.

CHOICE Michigan clover honey, new 60's. David Running, Filion, Mich.

FOR SALE—Extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

WHITE and light amber honey in new 60's. Harry T. Gable, Romulus, N. Y.

NEW crop clover extracted honey in new sixties. D. R. Townsend, Northstar, Mich.

WRITE me for prices and samples of honey. I can please you. Thos. D. Sherfick, Shoals, Ind.

CHOICE light extracted honey, in 60-lb. cans, 6c per lb. F. O. B. Roaring Branch, Pa. David Conn.

WHITE clover extracted honey. Write for prices and sample. Kalona Honey Co., Kalona, Iowa.

MICHIGAN'S finest well ripened white honey in new 60's. Sample, 15c. Jay Cowing, Jenison, Mich.

FOR SALE—New crop white comb honey, $3.50 per case of 24 sections. H. G. Quirin Bellevue, Ohio.

NEW crop white clover, both comb and extracted, ready to ship, any amount. F. J. Smith, Castalia, Ohio.

FANCY white comb, $3.25 case; No. 1 white, $2.75; No. 2 white, or No. 1 amber, $2.25; white clover extracted, 7c. C. B. Howard, Geneva, N. Y.

NEW crop section comb honey, nice white stock securely packed in carrier crates of four and eight cases. The Colorado Honey Producers' Association, Denver, Colo.

NEW YORK State comb and extracted honey, buckwheat and clover, any quantity, all size packages. Five-pound pails my specialty. Edward T. Cary, Midland Ave. and Tallman St., Syracuse, N. Y.

RASPBERRY HONEY—In 60-lb. cans, for $6.00 a can. In 10-lb. cans by mail, postpaid up to and including fourth zone, for $2.00 a can. Sample by mail, 20c. Elmer Hutchinson & Son, Lake City, Mich.

FOR SALE—Well ripened white sweet clover honey. Don't let your customers be without honey. The stock we furnish will please them. Write today for prices. Colorado Honey Producers' Association, Denver, Colo.

STOLLER'S excellent quality clover honey, finest obtainable. Cut comb and extracted. Write the Stoller Apiaries, Latty, Ohio.

BUCKWHEAT in sixties, 5½c; goldenrod, 6c. Sample, 15c. Otto Hurd, Phalanx, Ohio.

WATER white, white and sweet clover honey, two 60's, $8.00. Martin Carsmoe, Ruthven, Iowa.

HOLLY HONEY—10,000 pounds of holly, also willow extracted honey. Harry Spooner, Stephens, Arkansas.

WRITE for prices on new crop white clover extracted comb and chunk honey. H. E. Crowther, Jefferson, Ohio.

CHOICE Michigan honey, clover-basswood blend, new cans and cases. Frank Rasmussen, Greenville, Michigan.

TEN THOUSAND pounds water white sweet clover honey, $10.00 per case, 120 lbs. Ed. Mitchell, Castalia, Ohio.

CLOVER extracted, new sixties, case or ton lots. Also comb. Satisfaction guaranteed. I. R. VanDevier, Medina, Ohio.

FOR SALE—New crop white clover comb honey, finest ever produced. N. B. Querin & Son, Rt. 4, Bellevue, Ohio.

HARRIS can please you with fancy white extracted. New cans. Case or carload. J. N. Harris, St. Louis, Michigan.

HOWDY'S HONEY—Comb by carrier and extracted in new sixties by carlot or less. Howard Potter, Ithaca, Michigan.

CLOVER-BASSWOOD blend honey, well ripened, in new 60-lb. cans. Sample on request. B. B. Coggshall, Groton, N. Y.

FINE quality, white and light amber honey, in new cans and cases. Any quantity, case or carload. E. L. Lane, Trumansburg, N. Y.

FINE quality white clover honey, in new cans and cases. Sample, 15c. Any quantity, case or carload. Frank R. Parmelee, Le Roy, N. Y.

EXCELLENT flavored light clover extracted honey, also a limited amount of comb honey. Write for prices. Leo Zimmerman, Rt. 2, Brookville, Ohio.

SWEET clover honey at 8c per lb. Parcel post, 10 lbs., $1.90; 5 lbs., $1.00, postpaid up to the 3rd zone. The Vlk Apiaries, Independence, Ohio.

NEW JERSEY 1934 clover honey in 60-lb. cans. Finest color, quality, body. State quantity and get prices. Albert Hann, Glen Gardner, New Jersey.

EXTRACTED white clover honey in 5-lb. pails and 60-lb. cans. 1-lb. sample, 20c; new crop; also comb honey. F. W. Summerfield, Grand Rapids, Ohio.

1934 CROP clover honey. Extracted in 60's, 7c per pound. Comb in eight-case carriers. Fancy, $3.50; No. 1, $3.00 per case. Walter A. Wood, Naples, N. Y.

COMB and extracted honey. Fancy white comb, $3.25 per case; No. 1 white, $3.00; light amber, $2.75, packed in 6-case carriers. Clear white clover extracted, 7c lb. Very light amber, 6½c in new cans. Carlton D. Howard, Ovid, N. Y.

WATER-WHITE clover honey now ready. Edward Klein, Gurnee, Ill.

HONEY—Fine clover, in new 60's, $4.20. Warren Moore, Naples, New York.

BEST comb and extracted clover honey. Porterholm Apiaries, Adrian, Michigan.

550 CASES clover-basswood comb honey. Charles Guhl, Napoleon, Ohio, Route 7.

FINE quality New York State extracted honey. Emery Horton, West Bloomfield, N. Y.

BUCKWHEAT comb honey, fancy and No. 1. Write for prices. Noel J. Loucks, Springboro, Pa.

SUPERB quality comb and extracted now ready. Prices on request. Howard Grimble, Holcomb, N. Y.

FINEST new crop white clover honey in new 60-lb. cans. Sample, 15c. Noah Bordner, Holgate, Ohio.

FOR SALE—Clover honey in 60-lb. drums, fine quality, 7c per lb. f. o. b. Geo. M. Sowarby, Cato, N. Y.

NEW crop white honey, 60-lb. cans or smaller, 8-oz. sample, 15c. Clarence Deeter, Greenville, Ohio, Rt. 3.

FOR SALE—New crop clover honey in 5-lb. pails and 60-lb. cans, case or carload. H. B. Gable, Romulus, N. Y.

NEW YORK white and water white clover honey, suitable for bottling. Angus Carruthers, Rt. 2, Syracuse, N. Y.

Clover and buckwheat extracted in 60's, also in 5-lb. pails and 2½-lb. cans. Earl Rulison, Route 1, Amsterdam, N. Y.

CHOICE white clover honey in new 60-lb. cans and cases, at 6¾c per lb. John Bour, 81 West Davis Street, Tiffin, Ohio.

FINEST white clover honey, in new 60's, $9.00 per case of 120 lbs. net. Sample, 10c. W. J. Manley, Sandusky, Mich.

OAKVALE APIARY'S finest clover comb honey. Fancy, $3.75; No. 1, $3.25, carrier lots. Forrest Dygert, Hammond, N. Y.

RASPBERRY, CLOVER—New crop, finest obtainable, in 5-lb. pails, 10c; in 60s, 8½c. Murray's Golden Apiaries, Clarion, Mich.

FOR SALE—Several thousand pounds, delicious well-ripened white honey, in new 60-pound cans, 2 to case, 8c per lb. Valley View Apiaries, Savanna, Ill.

LET us supply you with honey for your customers. We can take care of you the year around. Comb, chunk and extracted; a case or a hundred. Pennsylvania Michigan Apiaries, 18 Packard Ave., Greenville, Pa.

OUR new crop of Michigan clover honey is now ready for the market. New cans and cases. We quote this fine honey at $10.00 per case of two 60-lb. cans. To large buyers, 600 lbs. or more, the price will be 8c per pound, on car here. E. D. Townsend & Sons, Northstar, Michigan.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTE—We will not guarantee any honey buyer's financial responsibility and advise all beekeepers to sell for cash only or on C. O. D. terms except when the buyer has thoroughly established his credit with the sellers.

CASH for dark grades of honey. C. Jankowski, Gurnee, Illinois.

WANTED—Honey from California, Oregon, Washington, Idaho beekeepers. Priced Tacoma or Puyallup. Send samples. Sherman Whitney, Puyallup, Washington.

WHITE clover 60's, 7½c lb. Light amber clover, 6½c lb. C. J. Baldridge, Kendaia, N. Y.

WANTED—Water white, fancy comb and tupelo honey. Henry Kelm, Webster Groves, Mo.

WANTED—Comb and extracted honey. Mail sample and prices. Wm. Feltz, R. R. 2, Michigan City, Ind.

WANTED—Comb and extracted honey. Mail sample, state quantity and price. Sherfick Farms, Shoals, Ind.

WANTED—White extracted honey, truck and carlots. State quantity and price. Mail sample. Morehead Apiaries, Convoy, Ohio.

WANTED—Carlots of honey, state quantity, shipping point and price. Mail sample. Bryant & Cookinham, Inc., Los Angeles, Calif.

WANTED—Carlots or less of white clover extracted honey. Mail price and sample to Clover Blossom Honey Co., Columbus, Ohio.

WANTED—Carloads and less than carloads of extracted honey; also comb. Mail samples and best prices. C. W. Aeppler Company, Oconomowoc, Wisconsin.

WANTED—Honey and beeswax. Beekeepers will find it to their advantage to communicate with us. Please send samples, state quantity available and prices. California Honey Company, Hamilton & Company, Agent, 108 W. Sixth St., Los Angeles, California.

FOR SALE

BEST bee hunting outfit. Grover, Bristol, Vermont.

ROOT extractor, complete. V. W. Binderup, Minden, Nebr.

SAVE queens. Safin cages now 15c, ten for $1. Allen Latham, Norwichtown, Conn.

FOR SALE—Old-fashioned straw beehives for roadside stands or honey exhibits. G. Korn, Berrien Springs, Mich.

FOR SALE—One 2-frame reversible Root extractor; takes Jumbo frames. Leonard S. Griggs, 711 Avon St., Flint, Mich.

ELECTRICAL comb honey cutting knives, uncapping knives, $10.00 each; with thermostat, $14.00. Paul Krebs, 8000 Fulton Ave., Detroit, Michigan.

COMB HONEY CARTONS, send for samples, odd lots at low prices. Give size and quantity you can use. A. G. Woodman Co., Grand Rapids, Michigan.

BEST quality bee supplies, attractive prices, prompt shipment. Illustrated catalog upon request. We take beeswax in trade for bee supplies. The Colorado Honey Producers' Assoc., Denver, Colo.

FOR SALE—Fine quality queen-mailing cages; Root quality bee supplies; both comb and extracted honey. Orders filled promptly. Write us or drive over M53, fifty miles north of Detroit. Hamilton Bee Supply Co., Almont, Mich.

BEES AND QUEENS FOR SALE

WHOLE colonies of bees, if advertised for sale in these columns, must either be guaranteed free from diseases, or, if not so guaranteed, the exact condition of the bees and the conditions of sale must be clearly stated in the advertisement; or it will be satisfactory if the advertiser will agree to furnish a certificate of health from some authorized bee inspector at time of sale.

FOR SALE—500 colonies bees, in A-1 condition; will guarantee free from disease. W. M. Peacock, Mapleton, Iowa.

"SHE-SUITS-ME" queens, see cut on page 574. Allen Latham, Norwichtown, Conn.

PURE Italian queens, good producers and gentle. One to nine, 70c; 10 to 24, 65c; 25 to 49, 55c. A. M. Kelly, Bell, Fla.

GET STUNG—These queens winter and pay their way; 70c each; ten, $6.50; 25, $13.50; 50, $25.00. D. W. Howell, Shellman, Georgia.

FOR SALE—250 colonies of bees, guaranteed free from disease, shop equipment, Root 45-frame Simplicity extractor. Mrs. A. B. Arnett, Valdosta, Ga.

THREE-BANDED Italian bees and queens that are real honey gatherers and gentle to work with, at code prices. Alamance Bee Co., Graham, N. C.

GOLDEN Italian queens that produce good workers, gentle to handle, at code prices. Untested, 70c; tested, $1.40. D. T. Gaster, Rt. 2, Randleman, N. C.

CAUCASIAN QUEENS—September and October delivery, that produce gentle bees and good honey-gatherers at code price. Lewis & Tillery Bee Co., Greenville, Ala.

EXTRA yellow Italian queens at lowest price permitted by Code; 1 to 9, 70c each; 10 to 24, 65c each; 25 to 49, 55c each; 50 or more, 50c each. Health certificate and satisfaction. Hazel V. Bonkemeyer, Randleman, Rt. 2, N. C.

CHOICE bright Italian queens that are a pleasure to work with and be proud to own. The stock has been bred and selected in the North the past 31 years for good winterers, hustlers, gentleness and fine color; 75c each; dozen, $8.00; breeders, $6.00. Emil W. Gutekunst, Colden, N. Y.

SAFE introduction of queens now guaranteed. Special cage. Special method. Instructions sent with queen. Another queen free if you fail. Carefully selected stock, well reared, sure to please. Order all you need, we have plenty surplus queens. Lowest code prices. L. L. Ferebee, Pineland, S. C.

GOOD queens for summer and fall requeening. We are producing close to 2000 a month of the kind you can depend on for your next season's crop. Gentle, prolific, evenly marked three-banded Italians. Annual requeening pays, and the satisfaction of having the finest stock the country affords in your yards is worth the cost. Select young laying queens, 1 to 9, 70c each; 10 to 24, 65c each; 25 to 49, 55c each; 50 to 99, 50c each. Usual discounts for larger quantities. No disease. H. C. Short, Fitzpatrick, Alabama.

ROOT EXTRACTOR COLUMN

(A free advertising service to Root customers who wish to dispose of their present extractors as they are purchasing Root machines of greater capacity.)

A REAL BARGAIN—Buckeye extractor, 8-frame, power, in fair condition. Write for price. Carl Landwehr, Delphos, Ohio.

HELP WANTED

WANTED—Practical beekeeper and wood mechanic-partner in Florida. Write 118 S. G St., Marion, Ind. W. S. Spaulding.

HELP WANTED—Handy man, to live on Indiana farm, 3-room cottage, wood cutting, carpentry, beekeeping. State wages expected. Earl M. Alexander, 224 South Broad St., Middletown, Ohio.

TOO LATE FOR CLASSIFICATION

FOR SALE—Northern Michigan white honey, in 120-lb. cases. Ralph Lenosky, Rt. 1, East Jordan, Mich.

MISCELLANEOUS

LETTERHEADS, envelopes, lowest prices, quality considered. Samples, prices free. Beekeepers' Printing Company, 1010 Eighth, Watertown, Wis.

BEEKEEPERS—Improve sources of nectar by planting vitex trees, or seed. Two-year-old trees, 40c; one-year-old trees, 25c. New tested seed at $1.00 per ounce. All prepaid. Joe Stallsmith, Galena, Kansas.

WYNROSE Honey Skin Food

A FOUR STAR TRIUMPH

Cleansing, Nourishing, Astringent. And an ideal powder foundation. Made with a **HONEY** base from the Formula of an Egyptian Savant. Wynrose combines every requisite for a flawless skin. **One dollar ($1.00)** per jar. Postage paid by **ROSE WINDSOR.**

Wynrose Laboratories, Greenwich, N. Y.

PATENTS—C. J. WILLIAMSON

Attorney for The A. I. Root Co.

Munsey Bldg. Washington, D. C.

Glassware

—5-oz., 8-oz., 16-oz., 24-oz. Both Bee Hive jars and Modernistic.

Tin Containers

2½-lb. cans, 5-lb. and 10-lb. pails, 5-gallon cans in bulk or 2 to the wood case.

Comb Honey Cartons

Both window and plain.

Cellophane

Plain and decorated, 24-section cases for comb honey, both wood and paper.

——SEND FOR PRICES——

M. H. HUNT & SON

LANSING, MICH.

BOX 7.

Stevenson's Golden Italians

THE BEES AND QUEENS OF QUALITY

Our method of raising queens produces large gentle, prolific queens. Their progeny are the best of honey producers; so gentle that it is a real pleasure to work with them, and they winter well.

Code prices. Write for circular.

Stevenson's Apiaries, Westwego, La.

We Are Getting Ready for 1935

Let us quote you on Packages, Colonies, Queens, Beekeepers' Supplies. If you want to kill your bees or increase let us figure with you now. High Quality Bees, Queens, Beekeepers' Supplies.

We still have queens. Prices:

1-9	10-24	25-49	50-99	100 or more	250 or more
$.70	$.65	$.55	$.50	$.45	$.42½

The Stover Apiaries, Tibbee Station, Miss.

HALF MILLION

Merrill's Quality Queens have been used in 25 years. We believe they are good. You try them and let us know how they work for you.

Prices—Italian Queens: 1-9, 70c; 10-24, 65c; 25-49, 55c; 50-99, 50c; 100-250, 45c; 250 or more, 42½c.

MERRILL BEE COMPANY

Mississippi's Oldest Shippers. BUCATUNNA, MISS.

30 ATTRACTIVE DESIGNS

"Eat Honey" Stickers, 1000, only 40c.

Root QUALITY BEE SUPPLIES

HONEY LABELS

SAMPLE FREE ✦ WRITE

Root QUALITY BEE SUPPLIES

THE A. I. ROOT CO., MEDINA, OHIO

Coming

Wonderful Feature Articles

Gleanings in Bee Culture

Do not miss them.

2 Years $1.50

(Do not let your subscription expire.)

-Mountain Gray Queens-

For June or Later

Ten years of selective breeding of Caucasians only enables us to offer stock that we believe will please you. Our bees are gentle and easy to handle. Many high producing records to their credit. Select untested queens: 1 to 9, each, 70c; 10 to 24, each, 65c; 25 to 49, each, 55c. Select tested queens, 1 to 5, each, $2.25, postpaid and guaranteed to please.

Bolling Bee Co., - Bolling, Ala.

THRIFTY QUEENS

Pile up extra supers of honey. That's why they are guaranteed to please. 1 to 9, 70c; 10 to 24, 65c; 25 to 49, 55c; 50 up, 50c. Guaranteed pure three-banded Italian stock. Accredited and certified.

W. J. Forehand & Sons

Breeders since 1892. FORT DEPOSIT, ALA.

Queens, 50c AND UP

BY RETURN MAIL
AS GOOD AS CAN BE BOUGHT

Requeen your colonies with **JOHN A. NORMAN'S** bright 3-banded Italians. You will be more than pleased with **MY** large yellow selected honey-gathering strain. They will build up and prove to your satisfaction and help to increase your honey profits. Every queen guaranteed purely mated, safe arrival and satisfaction.

Prices: June 1 to October 31.

Untested Queens—1-9, 70c; 10-24, 65c; 25-49, 55c; 50 or more, 50c each.

Tested Queens—Double the price of untested queens. 1—2-lb. pkg. with queen, $2.15 each.

John A. Norman, Ramer, Ala.

Box 113

Ellison's Queens

Perfection of beauty, quality and service. Book your order in advance, and get them on time. Most orders are shipped within 24 hours after receipt. Code prices for balance of season are as follows: 1-9, 70c; 10-24, 65c; 25-49, 55c; 50-99, 50c. Guarantee no disease and quick service.

O. G. ELLISON, BELTON, S. C.

Try the E. A. Simmon's Apiaries

GOLDEN ITALIAN QUEENS

There are none better. They have given satisfaction for over 30 years. Caged the day they are shipped. Ready to lay when you get them.

1 to 9, 70c each; 10 to 24, 65c each.

E. A. SIMMONS APIARIES, Greenville, Ala.
Powell Owen, Mgr.

Moore's Strain

Leather Colored Italian Queens

NORTHERN BRED

1 to 9	70c each
10 to 24	65c each
25 to 49	55c each
50 or more	50c each

World-wide reputation for honey-gathering, hardiness, gentleness, etc., since 1879. Safe arrival and satisfaction guaranteed. Circular free.

J. P. Moore

MORGAN KENTUCKY

FIRST-CLASS JOB PRINTING.
THE A. I. ROOT CO., MEDINA, O.

HOW ARE YOUR QUEENS?

Are your colonies weak and run down? Brood in only a few combs? Ready to double up any day? Requeen and put new life into them. Much has been said about queens, but

FOREHAND'S 3-BANDS ARE BRED RIGHT.

Untested Queens—1 to 9, 70c; 10 to 24, 65c; 25 to 49, 55c; 50 to 99, 50c; 100 to 250, 45c.

N. FOREHAND, DE LAND, FLORIDA, ROUTE 2

Root QUALITY

QUEENS

The demand for our queens has been greater than for a number of years. Root Queens produce colonies that are known for their gentleness, hardiness and superior honey-gathering qualities.

For Late Requeening
ORDER ROOT QUEENS

THE A. I. ROOT COMPANY
MEDINA, OHIO

Autumn Requeening

--With--

Jay Smith's Queens

invariably insures safe wintering and rousing strong colonies for spring and summer. More and more experienced beekeepers recommend autumn requeening.

"The queen I got from you in September proved very fine. They stood the winter splendidly although it was some cold, thirty below several times. I have raised some excellent queens from her." W. H. Brown, Sabula, Pennsylvania.

"The queens I bought of you last year made more honey than any others in the yard and they do not run me out of the apiary every time I want to look at them." T. W. Welker, Sandyville, Ohio.

We now have things going full swing, and can make prompt shipment of either small orders or in hundred lots. A certificate of health accompanies each shipment.

Prices: 1 to 4, $1.00 each; 5 to 9, 95c each; 10 to 24, 90c each; 25 to 49, 85c each; 50 to 99, 80c each; 100 or more, 75c each. We accept honey in exchange for queens allowing twelve queens to each case of 120 pounds of white extracted honey, freight prepaid.

JAY SMITH
Route Five Vincennes, Indiana

Garon's Bright Honey Fed Italian Queens

Are great honey gatherers and long-lived. There is still time to requeen. If you wish strong winterers, get the best. None better at any price. Health certified. Immediate shipment. Satisfaction. Code prices.

GARON BEE CO., Donaldsonville, La.

QUALITY BRED ITALIAN BEES AND QUEENS

We offer you unsurpassed quality, young bees, select queens, on time shipments, large quantities, full weights, light cages, safe arrival and satisfaction.

QUEENS BY MAIL POSTPAID

1 to 9	10 to 24	25 to 49	50 to 99	100 to 249	250 or more
70c each	65c each	55c each	50c each	45c each	42½c each

For queenless packages, deduct price of queens. For shipment by parcel post, add 20c per package, plus postage. For larger packages, add 80c for each additional pound of bees. Place your order now for choice of shipping dates and have your bees when wanted. Full line of Lewis Beeware and Dadant's Foundation at catalog prices.

YORK BEE CO., The Universal Apiaries Jesup, Ga.

TOLD BY THE JAY

(Continued from page 557.)

tight. How could we get it out without danger of her being stung? I got the shears and was asked to cut off the sleeve although her dress was new. 'Hurry! Never mind the dress. I would rather lose a dozen dresses than be stung, for it might kill me.' I finally got the sleeve cut off and the bee crawled out. It was a drone and although badly mussed up he could not suppress a smile. Yet you stand there and tell me bees have no sense of humor!"

TALKS TO BEGINNERS

(Continued from page 561.)

with a toothpick, or a small stick, to examine the contents of the cell. If the dead larva or pupa has sunken down into a mass on the lower side of the cell, and has the characteristic brown coffee color, American foulbrood may be present. In the late stages of the disease, the remains of the dead larvae or pupae dry down into dark-colored scales on the lower cell wall, which may be seen by tipping the top of the comb toward the eyes, in a strong light. If American foulbrood is suspected, a piece of comb three or four inches square containing some dead larvae, should be put in a tight wooden box and sent to the Bureau of Entomology, Washington, D. C., for examination. If disease is found to be present directions for its elimination will be furnished, free of charge.

HIGH CLASS COMMERCIAL PRINTING.
THE A. I. ROOT CO., MEDINA, OHIO.

Save Money

WHILE STOCKS LAST

Send Orders for the Following to
A. I. ROOT COMPANY OF PHILADELPHIA, 10 Vine Street, F. O. B., Philadelphia, Pa.

3—489—Root's wax presses, single, $15.00 each.
5—438—Root's electric wire imbedders, short, 50c each.
2 pairs—Medium drill bee gloves, without ngers, 40c each.
3—G4090—Storage tanks, 80-gallon, honey gate attached, $11.00 each.
2—215—Sets of 5 wooden letters for honey sign, nailed only, 75c each.
1—How to Keep Bees, 75c each.
10—Packed rims, shallow depth, nailed and painted, $1.20 each.
10—Packed rims, full depth, nailed and painted, $1.50 each.
2—Swarm catchers, old style, without poles, 50c each.
1500—Plain comb-honey cartons for 4x5x1⅜", 50c hundred.
25—Chaff division boards, 15c each.
25—Chaff division boards, nailed, 25c each.

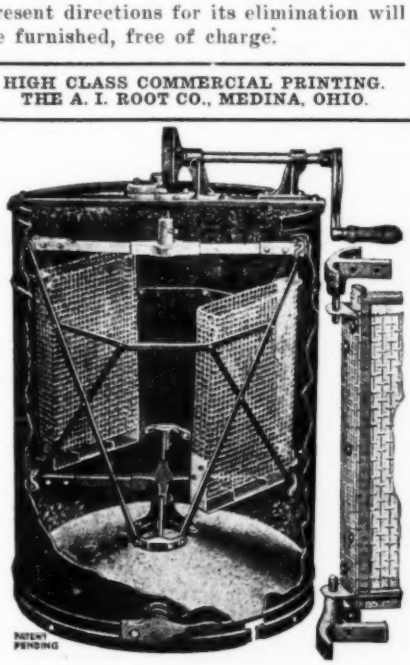
Send Orders for the Following to
THE A. I. ROOT COMPANY, MEDINA, OHIO.

600—Shopworn regular Benton queen cages, 3 holes, no candy, $3.00 per 100. F. O. B., Medina, Ohio.

KITSELMAN FENCE

FACTORY TO YOU, BRAND NEW!
We make the wire, weave it into Fence and ship direct, FREIGHT PREPAID. **You save** real money. All Copper Blend Steel, 99 92/100% pure zinc galvanized. **Horse-high, Bull-strong, Pig-tight.** Farm, Poultry and Lawn Fence, Steel Posts, Gates Barbed Wire, Paints and Roofing.
Kitselman Bros. Box21 **Muncie, Ind.**

WRITE for FREE CATALOG



Extractors

Removable Reversible Baskets

can be lifted out to disinfect in boiling water, in disease control. This is important for your protection. An ounce of caution is worth a pound of cure.

Not a drop of solder used in basket and reel construction. Riveted to last, can't come apart.

Have you had experience trying to resolder metal parts that have been covered with honey? Don't go through that again. Try a Woodman all-riveted extractor. All sizes and capacities from bench size to power radials.

A. G. Woodman Company

GRAND RAPIDS, MICH., U. S. A.

Queens of the Best Quality

With our queens you can reduce swarming. With our queens you can reduce winter loss. Our bees have never been exposed to disease. Prompt shipping and high quality make it pleasant for our customers. Untested: 1 to 9 queens, 70c each; 10 to 24 queens, 65c each; 25 to 49 queens, 55c each; 50 or more, 50c each. Tested queens, double the price of untested.

TAYLOR APIARIES, Luverne, Ala.

STOLLER'S
THRIFTY QUEENS

Bred for honey production—large and beautiful—heading vigorous producing colonies. They are very gentle.

SELECTED UNTESTED—1-9, 70c; 10-24, 65c; 25-49, 55c; 50 up, 50c.

Pure mating, safe arrival and satisfaction guaranteed. Health certified. A strain worthy of its name.

The Stoller Apiaries
Latty, Ohio

Latham's Queens
"She-Suits-Me" Queens
are line-bred three-banded
Italians
This strain of Italians is unsurpassed in tongue-length and also in nectar gathering
1 untested laying queen 80c
6 for $4.50 12 for $8
Allen Latham
Norwichtown
Season Happy-Hunt Conn.

September
A Good Time to Re-queen.

Will continue producing queens at the following prices:

Three-banded Italians only.

1-9	70c each
10-24	65c each
25-49	55c each
50 or more	50c each

Pure mating. No disease, safe arrival and satisfaction guaranteed.

The Crowville Apiaries, Winnsboro, Rt. 1, La.

Dependable Italian Queens

Our summer and fall flow has begun, making natural conditions ideal for queen rearing.

INSTANT SERVICE

Orders received by noon are shipped same day.

PRICES FOR BALANCE OF SEASON:

1-9	10-24	25-49	50-99	100-249	250 or more.
70c	65c	55c	50c	45c	42½c

J. E. WING, Cottonwood, California

Morrison's Northern Queens
STRICTLY THREE-BANDED STOCK

If you want Italian queens with years of selecting and breeding back of them (23 years of experience) for gentleness, honey gathering, less swarming and capping their honey white, requeen with Morrison's line-bred stock.

UNTESTED..1 to 9, 70c; 10 to 24, 65c; 25 to 49, 55c; 50 or more, 50c ea.
BREEDERS ..... $5.00 each

Pure mating, safe arrival and perfect satisfaction guaranteed.

George Morrison, Cloverdale, Ohio

ITALIAN QUEENS
CARNIOLAN QUEENS
CAUCASIAN QUEENS

Reared in different yards several miles apart. Can also send first cross of them.

Code Prices: Untested, 1 to 9, 70c each; 10 to 24, 65c each; 25 to 49, 55c each; 50 or more, 50c each.

RONALD KIRK
ROCKTON, PENNSYLVANIA

MOTT'S NORTHERN-BRED ITALIAN QUEENS

Practically non-swarming—not "hooey." August, September, 75c each; 25, 70c each; 50, 65c each; 100, 60c each. Select tested, fair to good breeders, $2.00, $3.00, $5.00 each. Virgins, 45c each. Free list. Satisfaction guaranteed.

E. E. MOTT & SON, Glenwood, Mich, U. S. A.

NORTHERN BRED QUALITY ITALIAN QUEENS

AT CODE PRICES.

World war veteran, specialized in bees under Government supervision; have certificate of graduation. Satisfaction guaranteed. Try my queens.

ALVA MORRISON, GROVER HILL, OHIO

Finest Italian Queens

IMMEDIATE SERVICE
SATISFACTION GUARANTEED

1-9, 70c; 10-24, 65c each; 25-49, 55c each; 100 or more, 45c each; 250 or more, 42½c each.

PLENTY OF PACKAGE BEES

Two-lb. with queen—1-9, $2.15; 10-49, $2.05; 50-99, $1.95; 100 or more, $1.76½; 250 or more, $1.65¾.

Three-lb. with queen—1-9, $2.80; 10-49, $2.70; 50-99, $2.60; 100 or more, $2.34; 250 or more, $2.21.

CITRONELLE BEE CO.
CITRONELLE, ALA.

CAUCASIANS

Extra gentle, prolific, long tongue, little swarming, dependable workers—10% to 40% ahead of Italians. Wintered here out-of-doors and bred in a climate like their native land—severe winters—cold windy springs—thus insuring their good qualities. Foundation stock from mountainous province of Terek, Caucasus.

Carniolans

Prolific at all times, very gentle, best of winterers, build beautifully white combs, most excellent workers. My Carniolan queens headed colonies producing 435 lbs. extracted per colony over the whole yard. 27 years with them. Have supplied many State Agricultural Colleges and Experiment Stations with them. My own and Jan Strgar imported strain.

Lowest code prices on queens. Untested queens, 1 to 9, 70c each; 10 to 24, 65c each; 25 to 49, 55c each; 50 or more, 50c each.

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Index to Display Advertisers

American Bee Journal.....518
American Honey Institute.....519
Bolling Bee Co.....571
Calvert Apiaries 575
Citronelle Bee Co.....575
Crowville Apiaries 574
Dadant & Sons 520
Edwards Mfg. Co. 515
Ellison, C. G. 571
Falconer Mfg. Co., W. T. 515
Forehand, N. 571
Forehand & Sons, W. J. 571
Garon Bee Co. 572
Hann, Albert G. 575
Harrell, W. E. 576
Hazel-Atlas Glass Co..Inside Back Cover
Honey Packers, Inc. 515
Hunt & Son, M. H.....569
Kelley Co., The Walter T.....518
Kirk, Ronald 575
Kitselman Bros. 573
Knight, Jasper 576
Latham, Allen 574
Lewis Co., G. B.....Inside Front Cover
Lotz Co., August.....515
Merrill Bee Co.....570
Moore, J. P.....571
Morrison, Alva 575
Morrison, George 574
Mott & Son, E. E. 575
Muth Co., The Fred W.....514, 515, 518
Norman, John A.....571
Root Co., The A. I., Back Cover, 515, 570, 572
Root Co. of Chicago, A. I.....514
Root Co. of Iowa, The A. I.....514
Root Co. of Syracuse, A .I.....518
Scott, J. J. 574
Simmons Apiaries, E. A.....571
Smith, Jay 572
Stevenson's Apiaries 569
Stoller Apiaries 574
Stover Apiaries 570
Taylor Apiaries 574
White Pine Bee Farms.....575
Williamson, C. J. 569
Wing, J. E. 574
Woodman Co., A. G.....573
Wynrose Laboratories 569
York Bee Co.....572